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ABSTRACT

This handbook was designed to assist counselors, teachers, and administrators in using the Career Skills Assessment Program (CSAT) materials and services properly. Part 1 of the handbook, Guide to Use of the CSAP, is primarily concerned with understanding, interpreting, and applying the results of the program. Specific topics discussed in this section include (1) the CSAP: an overview; (2) planning, organizing, and administering the assessment activities; (3) analysis and interpretation of summary reports; and (4) using CSAP in improving career education and career guidance programs. Part 2, Technical and Other Considerations, provides information about psychometric and statistical properties of the measures. Appended material includes specifications outlines and item classification tables, selected bibliography of skill building resources, procedures for performing a classroom item analysis, and a guide for identifying levels of expected performance. (LRA)

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Implementing the Career Skills Assessment Program

A Handbook for Effective Program Use

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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College Entrance Examination Board, New York, 1978

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The Career Skills Assessment Program (CSAP) is offered by the College Board, a nonprofit membership organization that provides tests and other educational services for students, schools, and colleges. The membership is composed of more than 2,000 colleges, schools, school systems, and education associations. Representatives of the members serve on the Board of Trustees and advisory councils and committees that consider the programs of the College Board and participate in the determination of its policies and activities.

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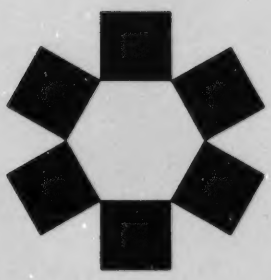
Preface

The primary purpose of this book is to assist counselors, teachers, and administrators to use the Career Skills Assessment Program's materials and services properly.

This edition of the handbook is designed to be used during the first several years of CSAP's existence. It does not contain technical data on current validation studies. Future editions will include more detailed information concerning such activities, as well as more extensive data on the performance of various groups of adults in community colleges and other educational settings.

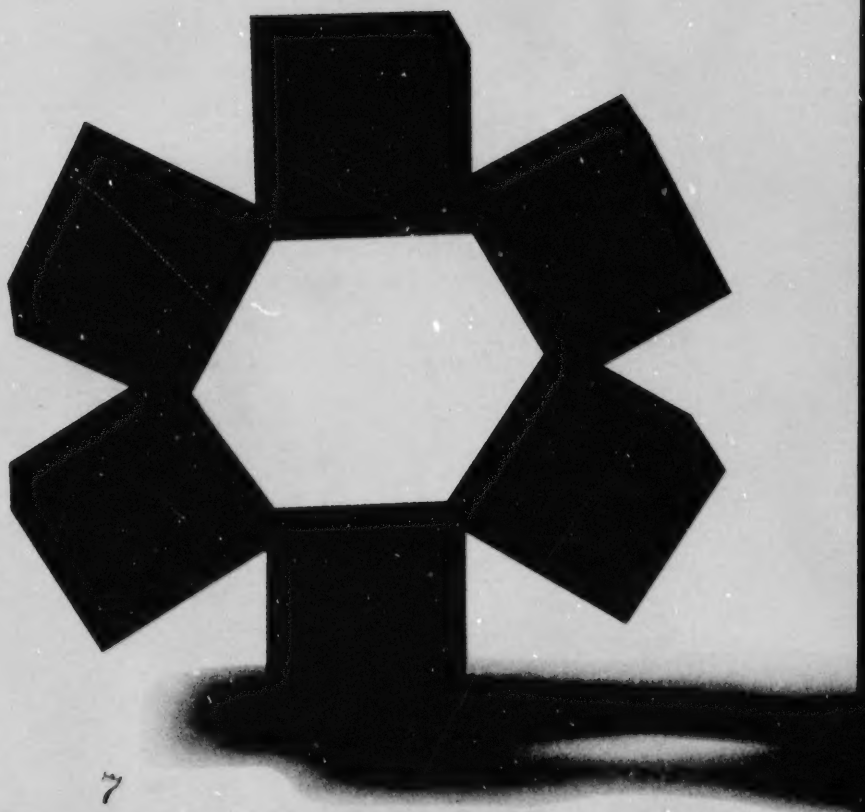
Part A of the handbook, Guide to Use of the Career Skills Assessment Program, is primarily concerned with understanding, interpreting, and applying the results of the program. Part B, Technical and Other Considerations, provides information about the psychometric and statistical properties of the measures.

A person using CSAP for the first time would benefit from reading this handbook prior to administering any of the measures and especially before interpreting any of the summary reports. The handbook should also be consulted when planning instructional or guidance program activities based on results of students' performance.



PART A:

Guide to Use of the Career Skills Assessment Program



I. Career Skills Assessment Program: An Overview

The Career Skills Assessment Program is a multiple-use evaluation and self-assessment program designed to measure proficiency in skills theoretically considered useful for achieving a personally satisfying career. The program consists of interrelated sets of materials in six content areas or modules:

- Self-Evaluation and Development Skills
- Career Awareness Skills
- Career Decision-Making Skills
- Employment-Seeking Skills
- Work Effectiveness Skills
- Personal Economics Skills

The program focuses on concepts and skills that are common to most developmental guidance programs nationwide, regardless of instructional materials and methodologies, and provides a set of tools for fostering individual self-guidance, assessing the current development of groups of students, and improving career development programs. Underlying the entire program is the theoretical assumption that career skills are not merely the result of experience and maturity but can be developed through instruction.

CSAP has been designed so that the materials can be used in a variety of ways, by different groups, and for different purposes, such as homework assignments in individual counseling or group guidance sessions, learning units in career education courses, or as supplementary activities in academic and vocational classes. The measures are easy to administer and score and can be used readily by counselors, teachers, and supervised paraprofessionals in school classrooms and school or community resource and counseling centers. Each content module may be used separately, or any number of them may be used sequentially in an integrated program. The materials can be used to appraise the progress of individual students or groups of students toward attainment of broad career development goals, as well as to foster the development of the specific career skills identified in the six content areas. They can also be used as experimental tools for evaluating a career education program.

Unlike most assessment programs, CSAP emphasizes follow-up activities as much as the assessment itself. Students can score their responses immediately, find out the preferred response to each exercise and why it was chosen, and then read the guides for further information and suggested activities for self-development.

The Six Content Areas

Brief descriptions of the six content areas follow. More detailed information about the contents of the six measures is found in the Specifications Outlines and Item Classification Tables on pages 54-76.

Self-Evaluation and Development Skills

This measure examines concepts and terms used to describe personal characteristics such as abilities, interests, values, and aptitudes. It explores the bases of individual differences and investigates the importance of evaluating individual attributes objectively. It assesses respondents' ability to interpret test results and other forms of evaluation, and their understanding of certain personal characteristics that can be modified, if necessary, through self-management. Questions to determine how well individuals can find and interpret information about themselves and their interactions with others, and how well they can apply self-knowledge to various occupational, educational, and leisure options, make up part of the measure.

Career Awareness Skills

This module focuses primarily on acquiring and applying career information. By going through the exercises, students become aware of how much they know about education, work, and leisure opportunities, whether they know where to find and how to evaluate information about these opportunities, and how well they use that information.

Career awareness skills are grouped in four basic areas: (1) relating abilities, values, needs, and experience to career choices; (2) locating, evaluating, and interpreting information for career choices; (3) obtaining facts about career opportunities; and (4) learning educational requirements for various occupations. In addition, the exercises and their accompanying guide are designed to introduce learners to the wide range of career options that are open to them.

Career Decision-Making Skills

This set of materials encourages individuals to approach career decision making as a series of steps that can be taken one at a time: defining the problem, establishing an action plan, clarifying values, identifying alternatives, discovering probable outcomes, eliminating alternatives systematically, and starting action. Situations described in the exercises suggest that career decision making is an ongoing process, that choices are reversible, and that changes in a person's circumstances or values may bring about the need for new decisions.

Employment-Seeking Skills

The materials in this area concentrate on knowing how to locate, apply for, and obtain a job. They are designed to assess how well students can anticipate job prospects, interpret facts about the job market, locate sources of job information, read and interpret employment advertisements, identify properly written letters, résumés, and job applications, describe appropriate dress and behavior for job interviews, and determine whether a specific job fits a person's needs and interests.

Work Effectiveness Skills

This area explores knowledge and skills considered necessary to hold a job, secure a promotion, or change jobs. Among the specific topics covered are the mutual responsibilities of employer and employee, job protocol, basic labor laws, and safety principles. Emphasis is placed on identifying habits and attitudes that contribute to successfully holding a job. Attention is also given to understanding means for resolving interpersonal conflicts, giving and receiving criticism constructively, dealing with conflicts between personal desires and work demands, and handling stress and anxiety in work situations. In addition, individuals are asked to recognize situations in which a job change is warranted, and to understand what a person needs to know in order to make an informed decision when considering changing jobs.

Personal Economics Skills

This module assesses practical skills and information considered necessary to manage personal finances competently and to function effectively as a consumer. Individuals who complete these exercises and read the companion guide are introduced to and explore: payroll deductions, fringe benefits, and preparation of tax returns; banking practices, especially as they apply to personal checking and savings accounts; procedures involved in purchasing goods and services and paying bills; becoming an informed consumer and having some knowledge of consumer rights; insurance concepts; loans, credit, and installment buying; investments; and basic economic concepts fundamental to understanding the workings of the American economy.

Program Components and Features

Each of the six content modules consists of:

- An exercise booklet
- A self-scorable and machine-scorable response sheet
- A self-instructional guide

These are color-coded for each area so that they may be readily linked with each other and easily distinguishable from materials in other areas.

Other CSAP materials and services that relate to all six content areas include:

- **Administering the Career Skills Assessment Program: Instructions for Using CSAP Measures,** a booklet containing instructions for administering the measures. It is sent free of charge with each package of exercise booklets ordered.
- **Implementing the Career Skills Assessment Program: A Handbook for Effective Program Use** (this handbook)
- Sound Filmstrip Kit, a three-part resource for staff and student orientation
- Machine scoring and summary reports

Exercise Booklet

Each exercise booklet is about 20 pages long and contains 60 to 70 multiple-choice questions, or exercises, which focus on four to seven skills in the content area. The Item Classification Tables on pages 71-76 identify the skill area to which each exercise is linked.

The booklets are easy to read and can be reused. Cartoons, graphs, charts, and facsimiles clarify new or unfamiliar concepts, create interest, and test the individual's ability to deal with graphic presentations of information. Some questions demand straightforward evaluation of facts, whereas others require judgments based on short fictional situations. Where possible, response alternatives include common misperceptions that can stimulate discussion. All materials avoid sex bias and situations or language that might offend any minority or cultural group.

Each booklet is intended for administration during one class period, or about 40 to 60 minutes, but precise timing is not important. Students should be allowed enough time to attempt a response to every exercise in order to get the most out of the assessment.

Response Sheet

A special three-ply response sheet permits simultaneous recording of responses for both self-scoring and machine scoring. The top ply, which records the responses for machine scoring, may be separated and returned for machine scoring, analysis, and report preparation. The remaining plies are used by the students for self-scoring, thus giving them immediate information on how they performed on the exercises. On the bottom ply, the preferred responses are enclosed in geometric symbols that correspond to the various skill areas of the measure. Scoring instructions appear on the middle and bottom plies.

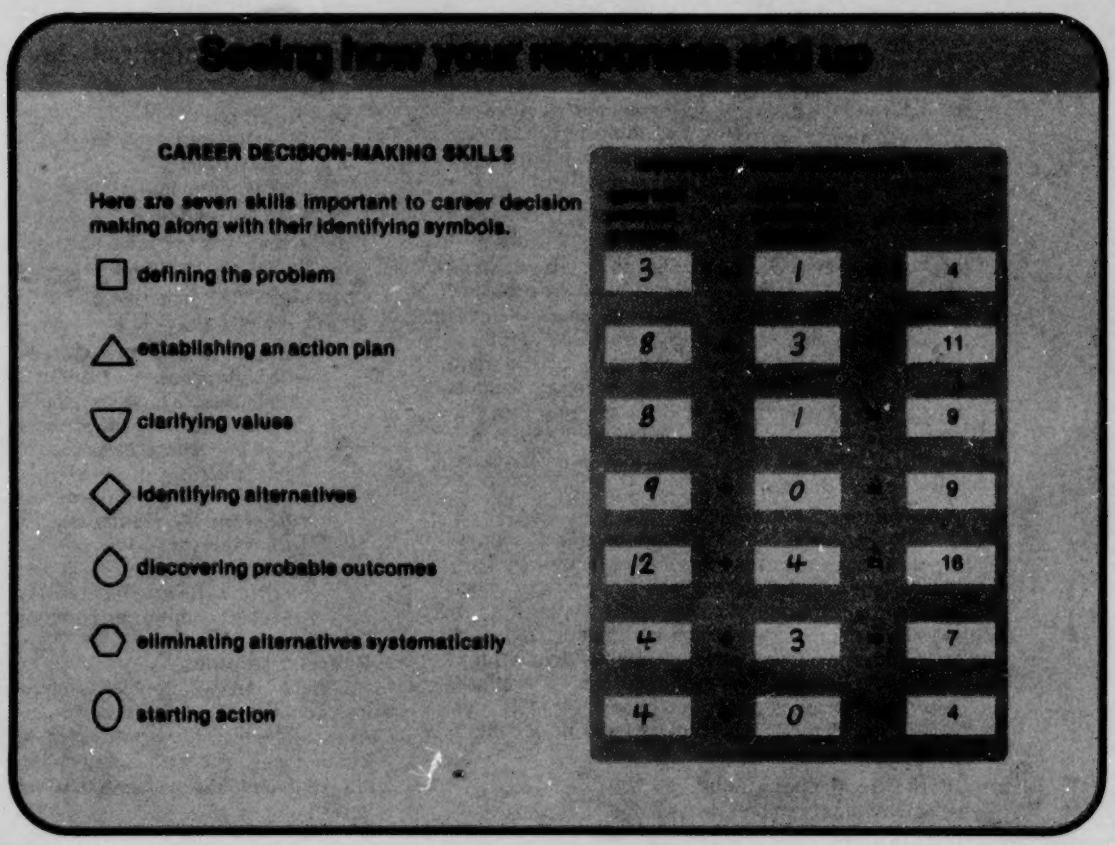
The person who self-scores a response sheet tallies the number of correctly identified preferred responses for a given skill area by counting the number of darkened response ovals that fall within the geometric symbol that corresponds to that skill area. The number of responses that agree with or differ from the preferred responses are entered in boxes on the response sheet, as shown in Figure 1. This procedure yields a number of raw scores, that is, the number of questions answered correctly out of the specified group of questions in each skill area.

There are as many raw scores in a measure as there are skill areas.

Self-Instructional Guide

After self-scoring the response sheet, each individual receives a self-instructional guide to keep. Each guide constitutes a minicurriculum and briefly discusses the skills involved in each content area, and in some cases includes a story or dialogue describing

Figure 1. Response Sheet Tally Section



someone applying those skills. By suggesting additional activities, materials, and resources, the guide encourages students to develop and strengthen their skills. It is intended as a reference source that students can continue to use as they explore career options and make career decisions. The guide also contains an explanation of the preferred response to each question in the exercise booklet. Students who want more information about why their responses agreed or disagreed with the preferred responses will be helped by these explanations.

Figure 2 illustrates how the materials for each content area are used, and in what order.

Administering the Career Skills Assessment Program: Instructions for Using CSAP Measures

This booklet contains an overview of the program, information about staff and student preparation, suggestions for follow-up activities, and complete instructions for ordering materials and scoring and reporting services and for administering the measures.

Implementing the Career Skills Assessment Program: A Handbook for Effective Use

This handbook provides the major description of the development and technical characteristics of the CSAP. It is the basic document to give users the knowledge needed to use the program.

Sound Filmstrip Kit

Designed to give staff and students an overview of CSAP and its use, each kit contains three filmstrips and accompanying tapes. One unit describes for staff the overall program and outlines its goals and uses. Another explains the program to students, emphasizing its noncompetitive nature, what the program is about, and how it can be helpful to them. The third filmstrip shows staff how the program can be used for assessment, evaluation, and guidance purposes. It can be used effectively in conjunction with this handbook.

Machine Scoring and Summary Reports

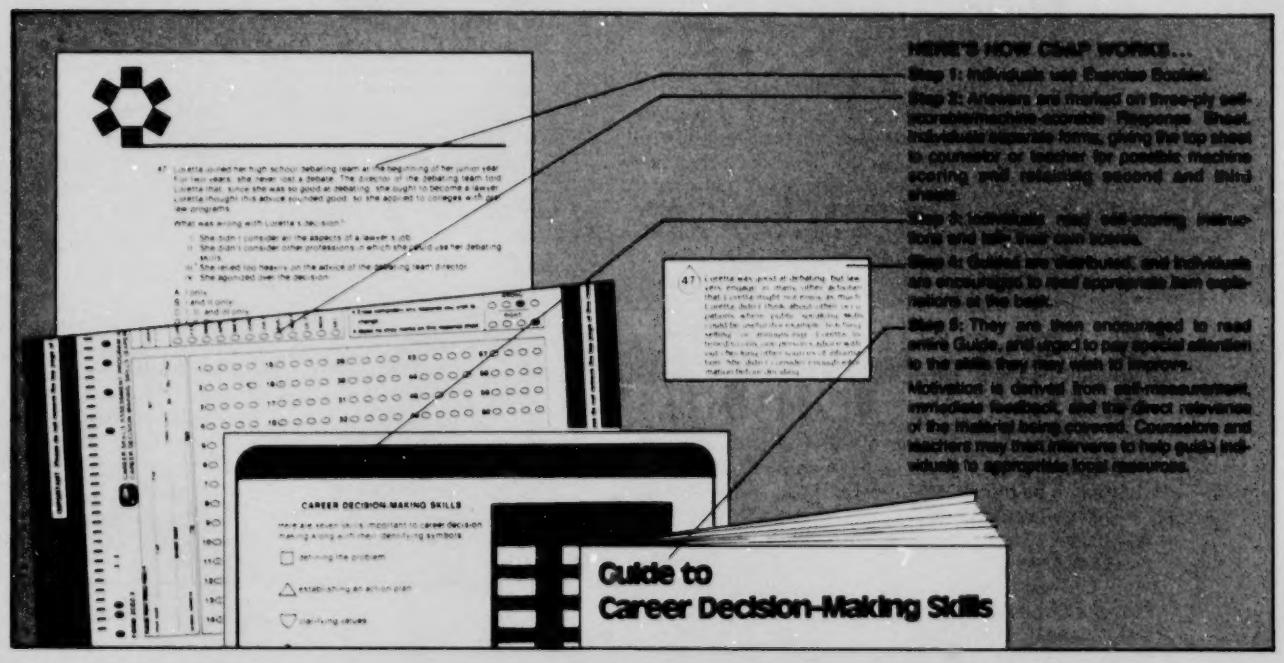
CSAP provides machine scoring and reporting for institutions that wish to use these services. For each group designated by the institution, a set of four reports will be prepared: an Item Response Report, a Skill Summary Report, a Profile Report, and a Frequency Distribution Report. Complete descriptions of these reports and instructions for interpreting and using them are contained in Section III of this handbook, "Analysis and Interpretation of Summary Reports."

Why Assess Career Skills?

Four purposes addressed by CSAP are among the broad goals of educational assessment in general: first, to find out where individuals stand in their development of career skills and knowledge; second, to identify areas where instruction or guidance may be needed; third, to find out whether intervention is beneficial; and, fourth, to compare the effectiveness of different forms of instruction.

The first purpose is primarily descriptive. The creation of an experimental yardstick for assessing

Figure 2. Steps in Using CSAP Materials for Each Content Area



career skills permits description of the current status of individuals or groups. From such descriptions, the user of the yardstick can evaluate subjectively the quality of different levels of performance.

Once a measure is used and an evaluation is made, a decision can be reached as to whether or not intervention is warranted in the skill development process. This decision, too, is subjective. Although the measure yields data, decisions that involve interpretation of the data rest with the user.

The decision to intervene raises diagnostic questions. What areas of relative strength and weakness have been identified? Which individuals need help and what kind of help? How do the needs relate to possible teaching methods? Can learning experiences be designed to address individual student needs?

The other purposes involve evaluation. How effective are particular instructional strategies? Can assessment of them improve a career education program? Can direction be changed midway to head toward a more promising path? Can the relative effectiveness of different educational programs be determined? Are students in the program developing different or better skills than students who are not? Is the instructional program worth its cost in time and other resources? Should available resources be allocated differently? Section IV of this handbook, "Using CSAP in Improving Career Education and Career Guidance Programs," discusses these and other evaluative applications of CSAP in greater detail.

Two further purposes of CSAP apply particularly to assessment of career skills: first, to provide tools that will motivate students to assess their own career development skills and if possible improve them; and second, to devise achievement measures to assess acquisition and retention of knowledge and skills that are desired outcomes of career education instruction and career development programs in general.

The first of these was a guiding objective for the program. It would seem that effective assessment tools for career education should contain an instructional element as well. A primary focus has been placed on content relevance, especially on content that could be directly communicated through instructional programs. It is suggested that CSAP be used in contexts that will investigate which career skills are most responsive to what types of training. Research designed to examine what types of behavior seem to be most directly affected by increased competence in the types of skills represented in CSAP would also be useful.

Rationale for the Six Content Areas

The six content areas of CSAP are useful in managing career-related concerns, regardless of the occupation to be pursued. Several of these areas have long received emphasis in traditional vocational guidance practice. Others are receiving current emphasis in a new concern for life skills. Although the six areas are not mutually exclusive and contain varying degrees of overlap, they are logically identifiable for purposes of skill development.

Self-Evaluation and Development

Frank Parsons, a pioneer in vocational guidance, stressed self-awareness in the early 1900s. Since then, vocational theorists, regardless of their particular point of view, have stressed the importance of self-knowledge for career planning and decision making. Self-evaluation, self-awareness, self-concept, and similar terms appear repeatedly in career development literature. According to Bergland (1974, p. 352),* "Students need to be able to differentiate personal values and personal interests as these are related to personal strengths and weaknesses in verbal, quantitative, and scholastic abilities. Students need to assess these elements of self, incorporate their meaning into their self-concept, and relate this self-information to the choices with which they will be confronted."

In recent years, self-knowledge has received renewed scrutiny as an aspect of continuing personality development throughout adulthood. Recent books like **Passages** (Sheehy, 1976) have heightened awareness that people develop and change throughout a lifetime. Cognitive behavior change theorists are contributing further to the conceptual foundations of self-management.

Career Awareness

Knowledge about the opportunities in work, education, and leisure has long been considered essential to effective career development. "While knowledge of self is important in decision making, knowledge and understanding of the environment and its contingencies are equally vital. In order to become skilled in vocational decision making, students need a comprehensive body of information that links their educational activities at various points in time to future educational and work opportunities. Students must understand the availability, composition, and direction of curricular pathways and how these pathways are linked to the occupational world. In addition, knowledge concerning such factors as social roles, the breadth of the world of work, and characteristics of organizations is also necessary for competent decision making." (Bergland, 1974, p. 353) For many years, training programs for school counselors have included formal courses in occupational information, and publishers of guidance materials have produced a variety of resources for heightening career awareness.

Career Decision Making

"As ... students acquire knowledge concerning themselves and the environment, they must also be stimulated to begin considering the manner in which these factors mutually interact to affect career choice and satisfaction ... Students must become motivated to develop an effective strategy for analyzing, organizing, and synthesizing information." (Bergland, 1974, p. 354) The importance of this information-processing strategy may again be traced to Parsons and what he termed "true reasoning." Some theorists use the

*Complete bibliographic information for works cited in the text appears under "References" following Appendix E.

terms career development and career decision making interchangeably. However, in CSAP, the phrase "career decision-making skills" is limited to the **process** of making career decisions, that is, the process of combining self-knowledge and career information in a rational way to yield an action-oriented decision. The seven-step model used in CSAP was adapted from a model developed by Krumboltz and Baker (1973).

Other approaches to rational decision making have been proposed. Many of these have been reviewed by Jepsen and Dilley (1974) and Bergland (1974).

Employment Seeking

Employment-seeking skills, as defined by CSAP, apply aspects of self-awareness, career awareness, and decision-making skills to looking for a job. Employment-seeking skills have long been emphasized in vocational guidance programs and are receiving renewed attention as career education gains support among educators. Curriculum resources emphasizing this set of skills are also widely available.

Work Effectiveness

Many if not most job-holding problems originate from causes other than the absence of specific vocational skills. Common problems involve difficulties in interpersonal relations, value conflicts, giving and receiving supervision, work habits (for example, punctuality and taking initiative), and work attitudes (for example, conscientiousness and honesty). Thus it was felt that a module on work effectiveness skills was an essential component.

Personal Economics

Finally, many life problems are rooted in inability to manage personal finances, the rewards of paid employment. Educators concerned with home economics, consumer economics, and business education have traditionally paid attention to many of the elements of the personal economics skills content area. Believing that a person who has these skills will be helped to cope with unemployment or assess the financial effects of a job change, career educators are now attempting to blend these skills with the broader concerns of career management.

Underlying Concepts and Assumptions

CSAP reflects a variety of assumptions and theoretical concepts from the career development literature rather than the formulations of a single theorist. It is essential to note a number of these key concepts and assumptions.

- Career development is one aspect of normal human growth and development.
- "In order to be whole persons, men and women naturally must engage in activities they consider to be significant. The need to make judgments about using time and assuming roles recurs throughout life. A person formulates a career by continually evaluating both what he wants to do with his life and the actions that will enable him to achieve his personal goals. Career development occurs as educational and vocational pursuits interact with other life pursuits. It continues throughout life." (National Vocational Guidance Association, 1973). CSAP's design reflects a desire to foster general career management skills that can be employed through a lifetime.
- Because career development is a continuous process, brief forms of assistance at selected developmental stages are likely to be less effective than intervention designed to engender skills that individuals may use throughout their lives.
- It is educationally productive to think of career skills as elements of human behavior that can be learned by anyone. Although career development is in part a maturational process, a basic tenet of career education is the assumption that such development can be aided by fostering specific skills and transmitting career-relevant knowledge. Theoretically, certain career skills can be learned—and taught—and individuals can be tested for competence in these skills.
- The desired outcomes of interventions in the career development process need to be clearly specified so that staff can determine whether or not their efforts have succeeded.
- Because schools provide the most practical context for the development of career skills, intervention models and tools must be designed with the schools in mind and in cooperation with them.
- Career guidance programs, whatever their underlying theoretical assumptions and procedures, should be able to demonstrate their impact on students' skills and knowledge.
- Viewing career development as in part knowledge and skills to be mastered places the concept in the realm of educational achievement and encourages attempts at skill building. This point of view does not preclude continuing investigation of career development processes through use of tentative psychological concepts that involve assessment of career maturity, self-concept, interests, attitudes, and other mental traits or personality dimensions. But it places emphasis on improving the processes of teaching and learning career skills and on assessing such skills as part of normal educational achievement in much the same way as achievement in reading or mathematics would be measured.
- Guidance for career development should include among its goals an increase in each individual's ability to assume responsibility for career planning and decision making. Dependence on staff intervention can be discouraged by incorporating do-it-yourself activities in school guidance programs. Self-assessment in career guidance programs can help to stimulate and focus career exploratory experiences.
- A person's career development process is subject to influence by other individuals and environmental circumstances. By mastering certain skills that

are useful in career management, it is possible to increase the likelihood of making changes that will lead to satisfying and effective career development.

- Many factors, in addition to work, influence the general quality and style of life. Thus, any program designed to facilitate individual career development should place it in a context that would take into account personal values and preferences.
- Assessment for career development should focus on development of individual potential.
- Self-awareness and accurate self-evaluation are essential to self-determination. Training in cognitive approaches to self-management can theoretically lead to more effective personal development and to attainment of a greater degree of control over one's life.
- Staff members will be able to describe more precisely the results achieved by a career education program if they have a measurement of what students have achieved. Administrative and community support for career education will depend in part on objective evidence of the effectiveness of such programs.
- Evaluation of students' needs in career skill building should be based on a desire to improve the educational programs that are designed to foster those skills.
- The selection of career skill-building materials and resources, and the design of career education programs, should be based on assessment of students' needs. Without prior needs assessment, program design is less likely to have an observable impact on students' knowledge and skills.

Intended Audiences for Use

CSAP is intended to be useful in a variety of settings. Teachers can use it in the classroom; guidance counselors will find it useful in individual counseling and group guidance settings. Program materials were designed for use with students at varying levels of general ability and are suitable for a wide range of secondary school and adult learners.

- **Comprehensive high schools:** In the comprehensive secondary school, CSAP materials can be used with students in academic, vocational, business, work-study, general, and career education programs. Flexibility in design permits integration of CSAP modules into many instructional units for both classroom and independent study applications, as well as for use in career resource centers.
- **Independent secondary schools:** CSAP materials are intended to be equally appropriate for college-bound students and for students who are not planning for postsecondary education.
- **Parochial secondary schools:** Educational staffs in religiously affiliated secondary schools will find CSAP materials compatible with their educational and career development objectives.
- **Vocational secondary schools and technical institutes:** CSAP materials are generally appropriate for use in vocational high schools, even in situations where students are engaged in preparation for specific occupations.
- **Community colleges, some four-year colleges, and certain other adult continuing-education settings:** Vignettes, exercises, and illustrations used in CSAP materials cover a range of age and educational levels. Institutions involved in CETA training programs may find certain CSAP units, such as Self-Evaluation and Development Skills and Personal Economics Skills, particularly useful.
- **Community services, private counseling agencies, and educational brokering agencies:** Community centers and organizations like the YMCA, YWCA, and B'nai B'rith Vocational Service, as well as private counseling agencies may find CSAP materials useful.
- **Special training programs:** CSAP materials have applicability in a variety of special training programs, such as those offered under the Youth Employment Demonstration and Projects Act, Work Incentive Program, and the Comprehensive Employment and Training Act. CSAP modules may be used as skill-building experiences for learners who do not have major educational disabilities.

CSAP materials require basic reading ability at the seventh-grade level or higher. Further information on reading difficulty appears in Section V.

How Institutions Can Apply the Results

CSAP measures are designed to meet the needs of institutions as well as individuals. Institutions can effectively use the data collected for the following purposes:

- **To measure students' needs in career skills and monitor subsequent progress.** Data provide a base point against which future skills and knowledge can be charted.
- **To assess overall career program needs.** Measures reveal skills and knowledge in which students are proficient or deficient.
- **To enhance career counseling.** Counselors can use program materials for instructional or motivational goals in individual counseling or group guidance. Performance on the measures provides a strong basis for suggesting skill-building activities and resources.
- **To identify bases for curriculum development and/or instructional emphasis.** Students' strengths and weaknesses identified through each measure might be considered in designing a school's curriculum materials or revising instructional emphasis.
- **To pinpoint bases for staff development.** In-service training of guidance and instructional staff in concepts and methodology might be planned with information gained from the measures about students' performance.
- **To evaluate program effectiveness.** Measures can be used to help assess the effectiveness of a specific curriculum, methodology, or program already established.

II. Planning, Organizing, and Administering the Assessment Activities

To administer any one of the measures in the Career Skills Assessment Program you will need: a copy of the exercise booklet, a response sheet, and a guide for each person in the group. For each person administering the exercises, you will need a copy of **Administering the Career Skills Assessment Program: Instructions for Using CSAP Measures.** The administration instructions are identical for all six measures in the series.

The CSAP exercise booklets can be retained for multiple uses in one year or in successive years. Reasonable precautions should be taken to guard against students' writing on the booklets or otherwise damaging them. After each administration, the booklets can be made ready for reuse by erasing all marks. With reasonable care, they should last four or more administrations before they have to be replaced.

Several models for use of the materials are discussed in **Administering the Career Skills Assessment Program.** Whatever plan is used, remember when you order materials to request sufficient quantities of response sheets and guides so that each individual in the assessment group can have a copy. Order as many exercise booklets as you will need at one time.

The most efficient procedure for group administration is for the whole group to complete the materials at the same time. This is especially important when the primary purpose of the assessment is program evaluation and you wish to avoid discussion about the program between students who have participated in the exercises and those who have not. Since the exercise booklets are reusable, the cost per use is relatively low.

If, however, the primary purpose in using the CSAP is individual self-assessment and growth, you might prefer to purchase a small number of exercise booklets and use them repeatedly with new response sheets and guides. Full explanations about how to order the materials appear on page 110.

Sample Set

A sample set of all the printed materials offered through the CSAP is available to all purchasers. Before selecting measures for administration, prospective purchasers are encouraged to examine the content coverage of the measures to determine their appropriateness for program needs, or for use in specific evaluation contexts.

Sample sets are available for $5 from Career Skills Assessment Program, Box 2839, Princeton, New Jersey 08541. Payment must accompany orders for sample sets. They are not returnable for refund.

Administration Instructions

Additional information on preliminary planning and student orientation as well as specific instructions for administering the CSAP exercises, self-scoring the response sheets, using the guides in follow-up guidance activities, and preparing and returning response sheets for machine scoring can be found in **Administering the Career Skills Assessment Program: Instructions for Using CSAP Measures**, a free copy of which is shipped with each package of exercise booklets.

Information for Students and Their Parents or Guardians

The information on the next page, which explains the CSAP to students and their parents or guardians, can be modified to fit the particular program that is using the materials. The page may then be duplicated and distributed.

CAREER SKILLS ASSESSMENT PROGRAM
OF THE COLLEGE BOARD

The Career Skills Assessment Program (CSAP) of the College Board is a self-assessment program that measures skills useful and necessary to achieving a satisfying career.

It consists of six content areas that can be used as a group or separately to assist students in evaluating their own career development.

The six content areas are listed below. Those checked will be administered at _____ (place) on _____ (date).

- ☐ Self-Evaluation and Development Skills
- ☐ Career Awareness Skills
- ☐ Career Decision-Making Skills
- ☐ Employment-Seeking Skills
- ☐ Work Effectiveness Skills
- ☐ Personal Economics Skills

Your daughter/son is a member of the group scheduled to participate. You may be interested to know what is involved and what benefits can be derived from this assessment experience. The steps in this process are listed below:

1. Students will answer 60 to 70 multiple-choice questions in each content area checked above.

2. Students will score their own answer sheets and be able to see immediately how their responses agree or disagree with the preferred responses.

3. Students will be given a guide that discusses the skills involved in the content area being studied; encourages students to develop and strengthen their skills by suggesting activities, materials, and resources; and provides explanations for the preferred response for each question.

4. Using the guide, students will participate in a class discussion that will permit them to share ideas and experiences and learn from what is expressed by others. The guide constitutes a valuable part of the career resource materials they will want to collect and keep as they continue their career development.

5. Students' response sheets may be sent for machine scoring. From this process, the school will receive score reports that can be used in staff training and curriculum planning.

6. Follow-up activities suggested by CSAP results will be a part of the continuing career education program in which your daughter/son is enrolled.

III. Analysis and Interpretation of Summary Reports

Data from an assessment program may be assembled and presented in a variety of formats to address different educational questions and concerns. This section describes the four types of group summary reports available through CSAP, presents guidelines for score interpretation, makes suggestions for possible uses of the summary reports, and identifies the kinds of questions that can be answered by the data. Suggestions and questions should be viewed as illustrative rather than exhaustive.

Description of the CSAP Summary Reports

Four group summary reports for each measure administered are provided in the CSAP summary reporting service to users who request central computer scoring:

- Item Response Report
- Skill Summary Report
- Profile Report
- Frequency Distribution Report

Within four weeks of submitting response sheets for scoring, an institution will receive the summary reports. Take time to look through the reports to become acquainted with the format and type of data included and to note any questions you may have. Then read the following descriptions of the reports and how to analyze them.

Figures 3-6 are facsimiles of these reports, reduced in size. They provide an overall view of a designated group's performance on a given measure, as well as information about the performance of each individual in the group. No reports are produced for distribution to individual students, because the self-scoring feature of the response sheet, together with the item explanations in the accompanying guide, permits immediate feedback. The "designated reporting group" for which the summary reports are issued consists of all the individuals whose response sheets have been grouped together for scoring by the sending institution.

A group size of at least 25 students per measure is recommended in order to have meaningful frequency distribution data. If the group is smaller than 25, the Frequency Distribution Report will omit percentile band and stanine, as well as percentiles and equivalent raw scores. If the group is smaller than 25, the Profile Report will also omit percentile band and stanine. See explanations of these terms on pages 26-27 and in the Glossary.

Raw scores (number of preferred responses correctly identified) for each skill area are not summed on the student's response sheet to produce a raw score for the total measure, although a total raw score appears on the Item Response Sheet available to teachers. This overall summing has been avoided intentionally so that students would be discouraged from comparing their total raw scores with those obtained by their classmates. Instead, in accord with a primary goal of the program, students are encouraged to use each measure to identify specific areas in which they might improve their skills. The response sheet analysis procedure permits students to obtain immediate feedback about their performance on all items and encourages use of the companion guide to learn more about the skills involved in the content area as well as the rationale for the preferred response to each item.

A concurrent goal of the program is to assist educators in evaluating student achievement in career education programs. For such purposes, a combination of data on individual items, skill area raw scores, total raw scores, and associated descriptive statistics are useful. Such data are found in the summary reports.

Item Response Report

The item response is the basic unit of analysis in the Item Response Report, (see Figure 3, page 17). Read item numbers vertically. For example,

1 1 1
0, 5, 6,

represent items 10, 15, 16. On the row immediately below the item numbers are the letters that identify the preferred response for each item. The preferred response is either the correct answer for items that have clearly correct and incorrect response alternatives or the answer considered most appropriate for items that involve judgment or opinion. The items for the measure being reported are clustered by skill area.

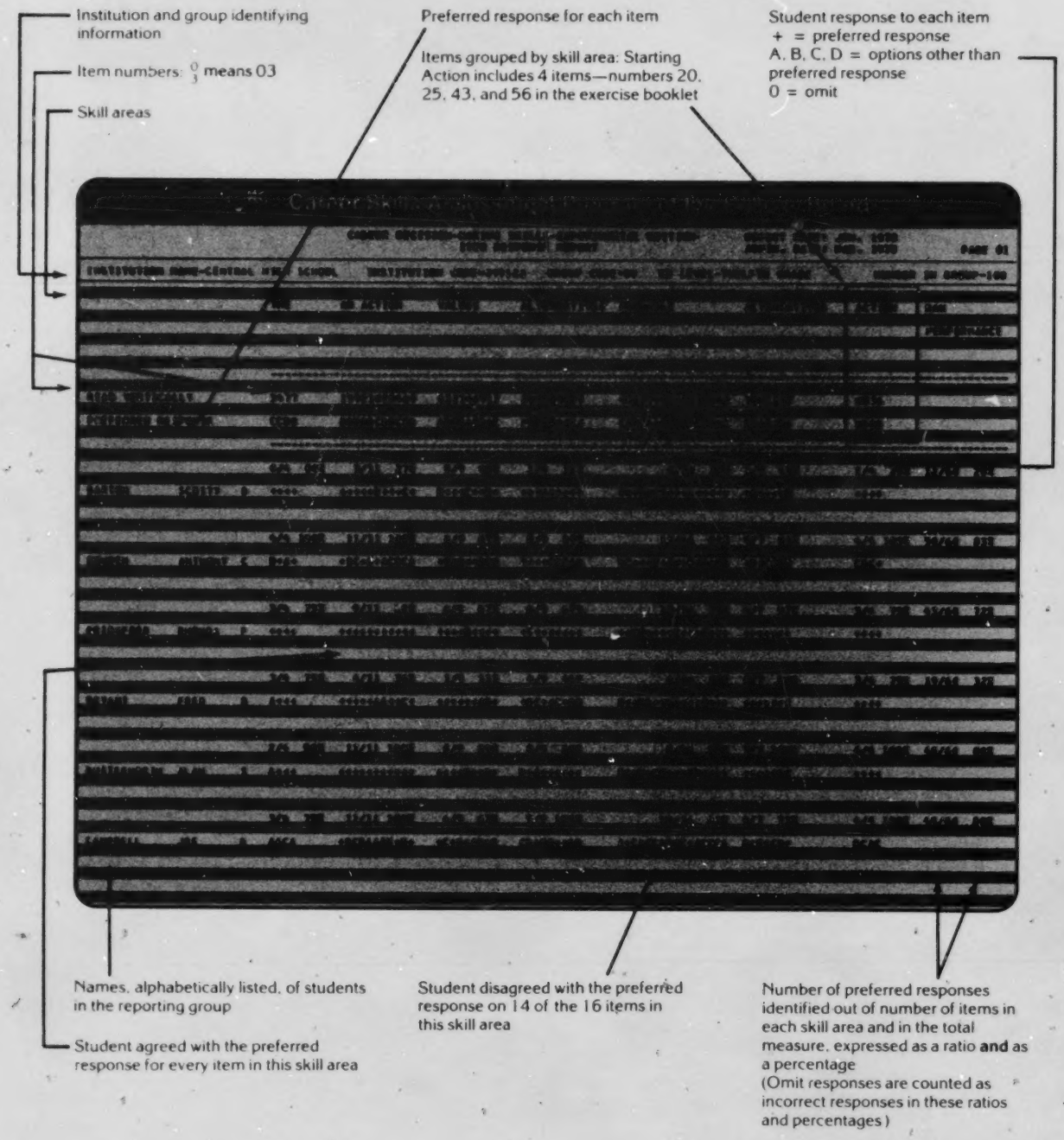
Following the row of preferred responses is the list of students in the reporting group. All students in the group are listed alphabetically by last name. The first row of information to the right of the student's name indicates which response the student chose for each item, as follows:

+ : the preferred response
A, B, C, D: an option other than the preferred response
0: no response

The second row of information for each student presents a performance ratio and equivalent percentage of correct responses for each skill area. The performance ratio is the ratio of correctly identified responses to the total number of items in the skill area. The percentage is the percentage of items answered correctly for that skill area. The two columns at the far right show the raw score (expressed as a performance ratio) and equivalent percentage correct for the total measure, reported for each student. Performance ratios and percentages of correct responses are adversely affected if students have not completed the exercises, since omitted items are counted as incorrect responses.

Figure 3. Facsimile of an Item Response Report

See page 16 for a full description of this report and information on how to use it.
See also "Questions CSAP Summary Reports Can Help Answer" on pages 23-25.


Institution and group identifying information
Item numbers: 0/3 means 03
Skill areas
Preferred response for each item
Items grouped by skill area: Starting Action includes 4 items—numbers 20, 25, 43, and 56 in the exercise booklet
Student response to each item
+ = preferred response
A, B, C, D = options other than preferred response
0 = omit
Names, alphabetically listed, of students in the reporting group
Student agreed with the preferred response for every item in this skill area
Student disagreed with the preferred response on 14 of the 16 items in this skill area
Number of preferred responses identified out of number of items in each skill area and in the total measure, expressed as a ratio and as a percentage
(Omit responses are counted as incorrect responses in these ratios and percentages)

Institution and group identifying information

Name of skill area, number and brief description of each item in it

Average number of preferred responses correctly identified by the group in this skill area, expressed as a ratio and as a percentage. See explanation on page 19 of how this percentage was computed

*Indicates the preferred response. Percentages of students selecting each alternative or not responding.

Figure 4. Facsimile of a Skill Summary Report

See pages 19-20 or a full description of this report and information on how to analyze it. The next-to-last page presents similar information for the total measure. See also "Questions CSAP Summary Reports Can Help Answer" on pages 23-25.

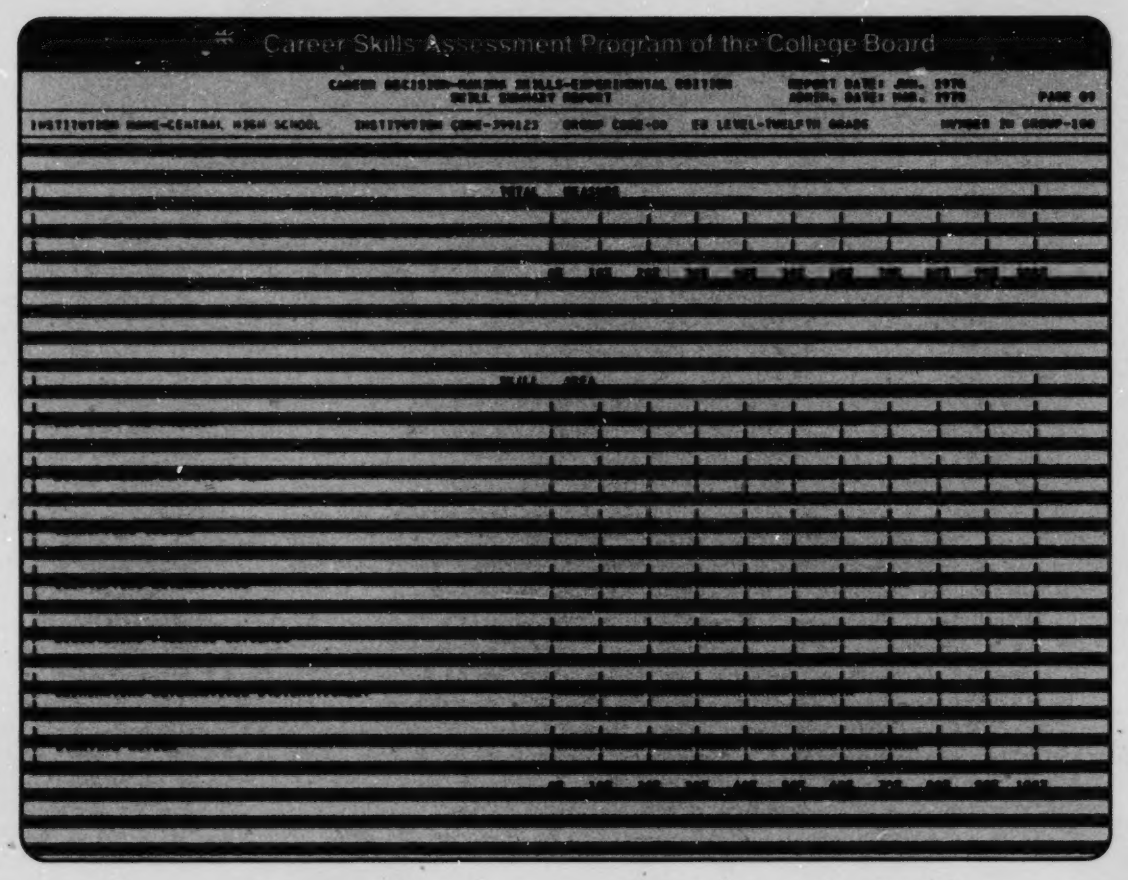
Omitted responses are counted as incorrect responses in computing the average numbers and percentages in this area

Items correctly answered by different percentages of the group. These are mutually exclusive categories. Only one item of the 9 in this skill area was answered correctly by more than 75 percent of the group. Two of the 9 items were sufficiently difficult to be answered correctly by less than 50 percent of the group; 6 of the 9 items were answered correctly by between 51 and 75 percent of the group

Figure 4. (Continued)

Final page of a Skill Summary Report

This page shows the group's performance on the total measure and on each skill area within the measure.



Skill Summary Report

The Skill Summary Report (see Figure 4) summarizes group performance on each skill area in a given measure. It provides a convenient means of analyzing the performance of a group of students on (1) any item in a measure, (2) any skill area within the measure, and (3) the total measure.

Each page lists the item numbers in a given skill area and a brief description of the content of each item and summarizes student responses to each item. The five columns on the far right identify the percentage of students who selected options A, B, C, and D, and the percentage who failed to respond to the item. The preferred response is indicated by an asterisk. These columns provide a ready indication of how many students selected the preferred responses and which alternatives proved most attractive to those students who did not.

In the section below the item description list is group summary information for that skill area. Presented first is a group performance ratio for the skill area, that is, the ratio of the average number of identified preferred responses to the total number of items in the skill area. Following that is the average percent of preferred responses identified in the skill area for the group.*

*This average percent of correctly identified responses in the skill area for the group is computed as follows: The numbers of correctly identified responses for everyone in the reporting group are totaled. This total is divided by the number of individuals in the reporting group to yield the average of correctly identified responses for each individual. The final figure is then divided by the number of items in the skill area to produce the average percent of correctly identified responses in the skill area for the group.

Displayed next on the Skill Summary Report are the items that were answered correctly by 76-100, 51-75, 26-50, and 0-25 percent of the group. The categories are mutually exclusive. In interpreting these data, it is important to note that omitted responses are counted as incorrect responses. Omitted items may not reflect item difficulty but may instead be items that students were not given enough time to complete.

The next-to-last page in the Skill Summary Report presents similar information for the total measure. The last page presents in bar graph form a visual representation of the group's performance on the total measure and on each skill area within the measure.

The Skill Summary Report can be used to find the same information for the group that could be found for the individual from the Item Response Report. By using the Skill Summary Report to examine the group's response patterns, you can identify which items or content areas students missed. You can use this information in planning future guidance activities. For example, if students demonstrate that they do not know about career information resources such as the **Occupational Outlook Handbook,** you can plan activities aimed at increasing general knowledge in this area.

Similarly, the Skill Summary Report may provide clues as to why students missed a particular item. You may notice, for example, that several students have chosen a response that incorporates common errors or misinformation. If so, you can work toward correcting that misinformation.

Profile Report

The Profile Report (see Figure 5) lists individuals in alphabetical order by last name and presents each individual's total raw score, stanine, and percentile rank and band. The raw score band is plotted on a bar

Figure 5. Facsimile of a Profile Report

See pages 20-22 for a full description of this report and information on how to analyze it. See also "Questions CSAP Summary Reports Can Help Answer" on pages 23-25. See pages 26-27 for discussion of group stanines, group percentile bands, and raw score bands.

Institution and Group Identifying Information

Names, alphabetically listed, of students in the reporting group. Although student Blanchard scores 7 points above student Bradley, assume no real difference in their abilities because their score bands overlap.

Raw score bands plotted as bar graphs. Sally Brown's raw score band extends from 15 through 23, representing the raw score 19 plus or minus a standard error of measurement of 4. (In computing percentile bands and raw score bands for CSAP reports, the binomial standard error of measurement is used. That is, the standard error of measurement varies with the score: scores at the middle of the score range have the largest standard error of measurement and scores at the low and high ends of the score range have the smallest standard error of measurement)

With this report, it is easy to identify students whose performance is above or below an expected performance level. For example, if 30 had been established as the minimum competency score, it would be clear that four students (Anderson, Bowden, Brown, and Campbell) performed below the standard because their raw score bands fall entirely to the left of (that is, below) that score. See Appendix E for guidelines on establishing minimum competency levels.

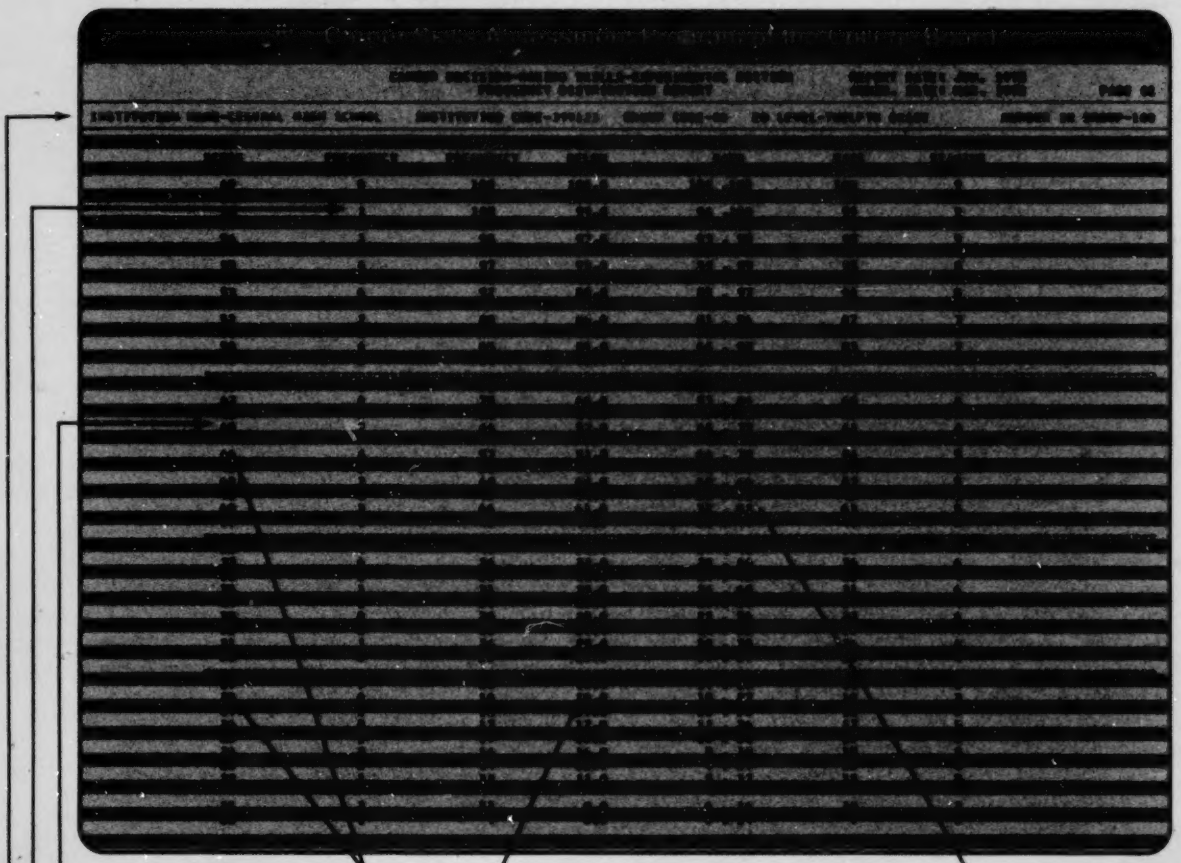
graph. It is important to remember that these stanines, percentile ranks, percentile bands, and raw score bands **are all based solely on the reporting group, not on national norms.**

Although the Profile Report permits easy comparison of the performance of different individuals, such comparisons are not the primary purpose of the report. The Profile Report facilitates analysis of expected performance levels and identification of groups of students whose performance falls above or below an established minimum competency level. Guidelines for establishing minimum competency levels are presented in Appendix E.

Persons analyzing the Profile Report might ask questions such as the following. Given the minimum competency level established for this skill area, how well did the group perform? If it is decided to provide skill-building experiences for those students whose performance falls below what is believed to be a minimum competency level, how large a group of students would be involved? Proceeding from the Profile Report data, it may be of interest to know how the educational experiences of those students who did well on this measure have differed from the experiences of those who did less well; whether the group of students who did well on this career skills measure is made up primarily of students who do well in other

Figure 6. Facsimile of a Frequency Distribution Report

From this report, you can find the average level of performance of the group, and how widely the scores are scattered above and below it. See pages 22-23 for full description of this report and information on how to analyze it. See also "Questions CSAP Summary Reports Can Help Answer" on pages 23-25.



Institution and group identifying information

Raw scores and number of students who obtained each raw score

Percentage of students (18%) in the group who scored below this score (29)

The number of students whose scores fall at or below the raw score of 44 is 57

See page 23 for discussion of cumulative frequency and how to compute it

This percentile band extends from 35 through 58

See pages 26-27 for discussion of percentile bands, percentile ranks, and stanines

Figure 6. (Continued)

Facsimile of Page 2 of a Frequency Distribution Report

Summary data: highest and lowest raw scores, mean score, and standard deviation

A one-minus (1 –) indicates the percentile rank is greater than 0 and less than .5 (99 + would indicate a percentile rank less than 100 and greater than or equal to 99.5)

Raw scores at selected percentile ranks

The smaller the group, the less it is possible to generalize from the data and apply the results to any other group. See the discussion of local norms on page 29.

academic areas; and whether there are special considerations, such as poor reading ability or language difficulties, that may have contributed to the relatively poor performance of the low-scoring group.

Frequency Distribution Report

The CSAP Frequency Distribution Report (see Figure 6) shows how scores obtained by a designated reporting group on one of the CSAP measures are distributed across the range of possible scores. This two-page report presents a single-unit interval raw score frequency distribution and associated percentile bands, percentile ranks, and stanines.

At the bottom of the report are summary data that show the size of group, range (expressed as high and low raw scores), raw scores at the 90th, 75th, 50th, 25th, and 10th percentiles, mean score, and standard deviation.

The first four columns of data contain what are commonly termed frequency distributions, tabulations of the frequencies of different scores arranged in order of magnitude. It is a simple method for summarizing and presenting data on the performance of a group of individuals. Such frequency distributions are useful both for describing the average level of performance of the group and for indicating how widely scattered the individual scores are around this average value.

The column at the far left of the report lists raw scores in descending rank order. Although it is possible for the range of raw scores to extend from 0 to 60

(or 70 in the case of Employment-Seeking Skills), scores at either extreme of this range are uncommon.

The second column from the left, frequency, shows how many individuals obtained any given score in the distribution. Some scores, especially those near the middle of the distribution, were obtained more frequently than others.

The third column from the left presents cumulative frequency, showing the total number of individuals whose scores are at and below a particular score interval. Cumulative frequencies are computed by adding the frequencies of the lowest and next-to-lowest scores. This sum becomes the cumulative frequency for the second score. This summing process is continued until the total number of cases appears as the cumulative frequency for the highest obtained score.

The fourth column, "percent below," tells what percent of the scores fall below the given score. It is computed by dividing the cumulative frequency of the next lowest obtained score by the total number of scores in the distribution.

The three columns at the right (percentile band, percentile rank, and stanine) constitute a conversion table that permits finding the equivalent percentile band, percentile rank, or stanine for any raw score for the reporting group. (See the discussion of these terms on pages 26-27 and in the Glossary.) If that group includes all or most of the students at a given grade or educational level in a building or district, the data may be viewed as local norms. Data from smaller groups may be viewed as local norms if the group is clearly established as representative of the larger group in terms of such factors as socioeconomic status, racial and ethnic composition, educational background, sex, and intelligence.

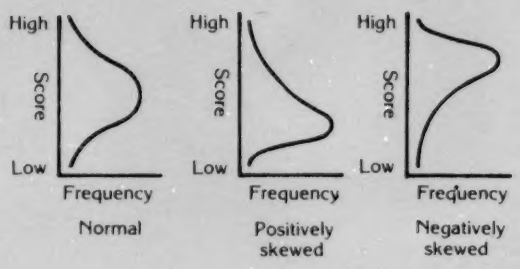
Near the bottom of the Frequency Distribution Report is the mean, the average score obtained by the group. It is calculated by dividing the sum of the scores by the number of individuals in the group.

The standard deviation is a measure of the spread or extent of dispersion of a set of scores around their mean. The standard deviation reflects the degree of homogeneity of the group with respect to the variable in question; that is, the less the dispersion of scores, the smaller the standard deviation. Basic textbooks on educational and psychological testing or elementary statistics provide explanations of how the standard deviation is derived and how it is interpreted.

Distributions of scores vary depending upon the characteristics of the group and the nature of the measure. The most common, or "normal," distribution resembles a symmetrical bell-shaped curve. Because the CSAP measures are relatively easy for certain populations, a so-called negatively skewed distribution is commonly observed, which produces a lopsided curve with the bulk of the scores bunched at the high end of the curve. Figure 7 illustrates three common distributions.

Examination and analysis of the Frequency Distribution Report will yield some insights into the performance of the reporting group. Are the scores normally distributed in a bell-shaped curve, or are they bunched at the high or low end of the score range? Are the individual members of the group similar in performance, or are there wide performance differences within the group? Do the data provide support for inclusion of a wide range of learning experiences in the guidance program, ranging from very basic experiences for the lower scoring students to enrichment experiences for those students who are already quite knowledgeable? How many students fall below a desired competency level? Is the general level of student performance low? Or are there a relatively small number of students with very low scores?

Figure 7. Common Statistical Distributions



Questions CSAP Summary Reports Can Help Answer

Summary reports available through CSAP provide information, which, considered with other information about an institution's programs and student performance, can lead to improved understanding of student status in career development and to ways in which existing career development programs can be strengthened and improved. The groups of questions that follow reflect career development concerns and problems that frequently confront educators. The information that CSAP can elicit will contribute to the resolution of these problems. The columns to the right of the questions identify the particular CSAP summary reports that would be of most use in addressing the questions.

Three to four weeks may elapse between the date when the CSAP measures are administered and the receipt of summary reports. During that time consider questions such as those suggested above and develop your own list. Try to list as many questions as you can that you would like to have answered. Identify especially those questions that you consider of greatest importance and interest. Having such a list of questions will help you focus your attention in interpreting and using summary report information.

Note that CSAP results cannot answer all questions. You will not be able to determine, for example, how the performance of a particular group compares with a national average, whether students should be encouraged to work primarily on developing skill areas in which they received low scores, why a student's performance is low or high in a given area, or what kinds of instructional activities you should introduce to remedy deficiencies.

	ITEM RESPONSE REPORT	SKILL SUMMARY REPORT	PROFILE REPORT	FREQUENCY DISTRIBUTION REPORT
Assessing student needs in career skills and monitoring subsequent progress				
• Is the group's performance above, below, or at the level I expected it to be?		X	X	X
• What percentage of students in this group correctly identified the preferred response to each item?		X		
• Which items were easiest/ hardest for this group of students?		X		
• How does the performance of this year's class compare with the performance of similar classes in previous years?		X		X
Assessing overall career program needs				
• In what career skill areas does this group of students appear to be most proficient?		X		
• In what skill areas does this group of students appear to be deficient?		X		
• Do present student performance levels suggest a need for re-evaluation of our career development programs or point out a need for development of new ones?		X		X
• What career development experiences should my class have next? What skill-building materials should I use?		X		
• Is our school's career guidance program becoming more effective or less effective?		X		X
Enhancing career counseling				
• How were the scores of the group distributed? Were they bunched or spread? If they were spread, were they spread symmetrically and smoothly, or were they skewed and uneven?			X	X

	ITEM RESPONSE REPORT	SKILL SUMMARY REPORT	PROFILE REPORT	FREQUENCY DISTRIBUTION REPORT
• What were the highest score and lowest score (the range of scores) on this measure?			X	X
• Which students received the highest/lowest scores in my group?	X		X	
• What was the average score for the group?				X
• Does a particular student appear to need further work in developing _____ skills?	X			
• Do the lower performing students show deficiencies in a specific area that I could work on by grouping them for a particular skill-building activity?	X	X		
Identifying bases for curriculum development and/or instructional emphasis				
• Can the effects of changes in our school's career development strategies and experiences be observed in improved overall student performance?		X		
• How much difference in knowledge and skills is there between our tenth and twelfth graders?		X		
• In planning future career development experiences for my class, how can I find out what they already know and what they need to learn?	X	X		
Identifying bases for staff development				
• Is our staff doing as good a job in career education as it should be doing?		X		X
• What areas of student performance suggest a possible need for staff in-service training?	X	X		
• Are our students learning the things we are trying to teach?	X	X		

Evaluating program effectiveness	ITEM RESPONSE REPORT	SKILL SUMMARY REPORT	PROFILE REPORT	FREQUENCY DISTRIBUTION REPORT
• How effective was a given program or instructional unit?	X	X		X
• What performance differences exist among groups of students who have been exposed to different programs?		X	X	X
• What gains in career skills has this student group made as a result of exposure to our new career development program?		X	X	X
• How can we assess growth in student career skills over a period of time?		X	X	
• If we introduce a new classroom instructional unit on decision making, how can we assess its impact on student performance by using CSAP measures?		X	X	X
• Which schools/classes are showing the best student performance in their career education programs?		X		X
• How can we determine if an input of increased financial support into a given district/school will result in improved student career skills?		X		X

Score Interpretation

Should interpretation of results be norm-referenced, criterion-referenced, or objectives-based? The discussion here assumes that the three types of interpretation are complementary, rather than mutually exclusive. Any or all types of interpretation might be made.

The CSAP scoring and summary reports were designed to provide information about the level of performance of groups of students on single items that measure specific career development objectives, and on clusters of items that measure closely related objectives or have related content. They can also provide information about the level of performance of individual students. This information can be combined with other types of information (such as observations of day-to-day behavior, involvement in other guidance activities, expressions of future plans, and current performance in work situations) to make reasonable and useful judgments about the student's career skills.

Relatively brief survey measures like those in the CSAP cannot include numerous items to measure each specific career development objective. Nor can they do more than sample the universe of possible specific career development objectives in a given skill area. However, the total number of items in the measure and the construction quality of the individual items are such that the reliability levels of the CSAP measures are among the highest yet attained among career development measures of various types. Reliability here refers to score precision and stability. Performance ratios and percentages for the total measure can be considered reliable indicators of a student's understanding of the overall career development objective of the measure.

In some instances there are limitations in interpreting data from the Item Response Report and the Skill Summary Report. Because the number of items in each skill area is small, the reliability of an individual student's performance ratio and percentage in a particular area is appreciably lower than their reliability on the total measure. Consequently, **skill area performance ratios and percentages for individual students should be interpreted with caution.** They are most useful as indicators of areas of possible exploration.

On the other hand, for most of the item clusters, the number of items is sufficient to make reliable interpretation of the performance of **a group of students** such as a classroom unit. Reliable interpretations of the group's performance on individual items can be made if the group is large enough (at least 75 students). An individual student's response to any single item, on the other hand, is **not** a reliable estimate of his or her skill at the specific objective being measured by that item.

In interpreting performance on the CSAP measures, it is useful to know the nature and unique features of each score mode provided for the program: raw scores, percentile ranks, percentile bands, raw score bands, and stanines.

Following are explanations of these modes.

Raw Scores

A raw score consisting of the number of correct responses for each skill area and for the total measure will be obtained for each individual. A raw score always pertains to a specific form of a measure and cannot be compared directly with scores on any other form. It should also be noted that even though the number of items on five of the measures in the CSAP series is the same (60), raw scores on one skill measure cannot be compared with raw scores on any other measure, because the scores reflect different levels of difficulty among the measures. Raw scores on a particular form of a measure are of limited use and should be translated into status scores (percentile ranks, percentile bands, or stanines) if an individual's performance is to be compared with that of others in a group that has completed the measure. These status scores are not diagnostic. That is, two students with the same score may have unrelated difficulties with specific subject-matter content. For this reason, similar responses to items classified by content and skill should be the primary consideration for grouping individuals and for designing instructional or career guidance strategies. To facilitate such consideration, the items in each measure in the CSAP have been classified according to their content. The Item Classification Tables appear in Appendix A.

Percentile Ranks

A basic unit used in making comparisons of performance within a group is percentile rank, the percentage of scores in a distribution that are lower than a particular score (including half of the cases **at** the particular score as well). For example, if a score of 42 has a percentile rank of 78 in a certain group, this means that the number of people with scores lower than 42 plus one-half of those with the score of 42 equal 78 percent of the group. Percentile ranks range from a low of 1 – to a high of 99 +, and 50 always indicates the median score. In general, equal score changes represent unequal percentile-rank changes. A difference of five score points at the center of a distribution represents a larger difference in percentile rank than does the same difference in score points at the ends of the distribution.

Furthermore, although a percentile rank indicates a person's relative standing within a reference group, percentile ranks do not represent equal measurement units in the same way that a gram represents a unit of weight. Thus, they do not reveal how much more one person knows than another.

Because percentile ranks show the relation of an individual score to a group of scores, the rank of a score depends on the makeup of the group. Thus, the same raw score for a given individual would yield different percentile ranks depending upon the comparison group. A particular individual is simultaneously a member of many different groups: all persons of the same age or in the same grade or in the same school district, and so forth. In the CSAP summary reports, the only percentile ranks produced are based on the reporting group submitted by the participating institution or individual examiner.

CSAP percentile ranks should not be compared unless they are based on the same group or comparable groups. This caution is especially important for CSAP summary reports, since the percentile ranks reported are based on the reporting group only. The same raw score may result in quite different percentile ranks for two reporting groups if the overall performance of the two groups was quite different.

Interpretations of performance based on percentile ranks should be based on a clearly identified reference group. In many cases, the reporting group will not be representative of all individuals in a given grade or educational level. Therefore, the percentile ranks presented on the summary reports should be construed as local norms **only** if the group on which the percentile ranks are based is clearly established as representative. Please refer to the cautions on local norm construction in Appendix D.

Percentile Bands

When interpreting scores in terms of percentile ranks, care should be taken to avoid attaching undue significance to small differences between ranks. Because the precision of any measure is limited, the scores individuals obtain on the CSAP measures should be regarded as estimates of their abilities. The scores individuals earn usually differ from their "true" score but fall within a limited band around them.

With the aid of the standard error of measurement (see the discussion in Section VI), the range within which a true score will probably lie can be estimated. One standard error of measurement is added to the obtained score to establish the upper limit of the range, and the same value is subtracted from the obtained score to establish the lower limit of the range.* A true score would be between these limits approximately two times out of three. A percentile band represents the conversion of the limits into their corresponding percentile values.

Interpreting scores in terms of percentile bands helps to prevent making judgments about performance results that are more precise than are justified. A more realistic picture of performance is given when the score in interpreted as being within a percentile band rather than as a specific percentile rank. Percentile bands are particularly useful in deciding whether or not there is likely to be a real difference in the capabilities represented by two or more scores of different individuals. The percentile bands used in these comparisons must be based on the same defined reference group, and the judgments are made by applying the following rule of thumb:

If the two percentile bands under consideration do not overlap, one can be reasonably sure that there is a real difference in performance.

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*In computing percentile bands for CSAP reports, the binomial standard error of measurement is used. That is, the standard error of measurement varies with the score: scores at the middle of the score range have the largest standard error of measurement, and scores at the low and high ends of the score range have the smallest standard error of measurement.

Figure 8. Verbal Interpretation of Percentile Bands

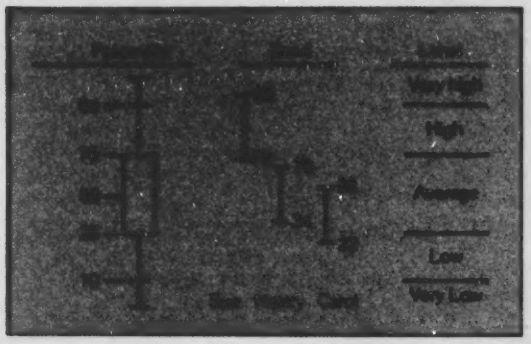
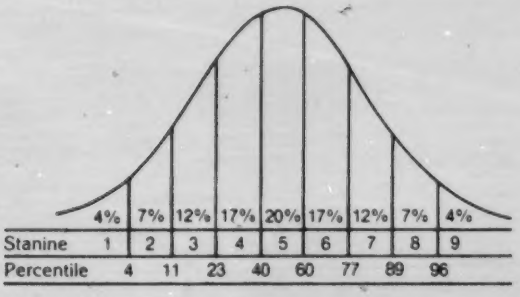


Figure 9. Percentage of a Normal Distribution in Each Stanine and Corresponding Percentiles



Consider three individuals and the percentile bands based upon their scores on the same measure: Sue, 72-96; Nancy, 34-70; and Carol, 22-56. Sue's percentile band does not overlap either Nancy's or Carol's. On the other hand, the percentile bands for Nancy and Carol do overlap; consequently, it is reasonable to conclude that there may be no real difference in their performance.

A diagram like the one shown in Figure 8 presents the percentile bands visually and can be helpful in explaining scores and score differences to individuals. In the diagram, the 90th, 75th, 25th, and 10th percentile points have been chosen as cut-off points for the labels Very High, High, Average, Low, and Very Low; the percentile bands for Sue, Nancy, and Carol have been plotted. Because the greater portion of Sue's band falls within the area labeled High, her score would be described as high; all of Nancy's band and most of Carol's fall within the area labeled Average, and their scores would be so described.

Raw Score Bands

The raw score band is similar in concept to the percentile band in that it presents a range or confidence interval within which a true score probably falls. The standard error of measurement (in raw score units) is added to the obtained score to establish the upper limit of the band and subtracted from the obtained score to establish the lower limit.* A true score would be within these limits approximately two times out of three.

Raw score bands are used in the Profile Report to facilitate establishment of a level of expected performance and interpretation of scores that fall at or near that level. See the discussion of "Identifying Levels of Expected Performance" on pages 99-104, especially the section "Establishing a Gray Area."

Stanines

The use of stanines is appropriate when only gross score interpretations are desired. Stanines divide a normal distribution of scores into nine segments (the concept derives its name from **stan**dard **nine**). The stanine scale ranges from a low score of 1 to a high score of 9, and 5 represents the average performance for individuals in the reporting group score distribution. Figure 9 shows the approximate percentage of cases in a normal distribution that falls within each stanine. The highest- and lowest-scoring 4 percent are assigned stanines 9 and 1 respectively; the next higher and lower percents are assigned stanines of 8 and 2, and so on. The standard deviation of stanines in a normal distribution is approximately 2.

There are two reasons why stanines should be used with caution. First, a certain amount of error is associated with the juncture of adjacent stanines. The standard error of measurement is, of course, applicable to each possible score. Consequently, individuals grouped by stanines will not always be correctly placed. Some of those individuals whose scores fall in the upper limit of stanine 6, for example, may belong in stanine 7; conversely, some individuals whose scores fall at the lower limit of stanine 7 may belong in stanine 6. Second, stanine scores, like other status scores, are not diagnostic.

Further information relevant to score interpretation is contained in Section VI, "Statistical Characteristics of the Measures."

Chance-Level and Less-than-Chance-Level Scores

In multiple-choice tests that are scored without a correction for guessing, a chance-level score is defined as the raw score that would be obtained if a student marked responses at random. The chance-level score is equal to the number of items in the measure divided by the number of alternative responses for each item. Because the CSAP measures consist of four-option items, the chance-level score on Career Decision-Making Skills, for example, would be 60/4 or 15 raw score units. It is possible, of course, to achieve scores slightly above chance level by chance alone. Nonetheless, scores greater than the chance-level score are generally considered nonchance.

There are several explanations for chance-level or less-than-chance-level scores in addition to the possibility that the student has little mastery of the material. Such a score might occur if a student acci-

*In computing raw score bands for CSAP reports, the binomial standard error of measurement is used. That is, the standard error of measurement varies with the score; scores at the middle of the score range have the largest standard error of measurement, and scores at the low and high ends of the score range have the smallest standard error of measurement.

dentally skipped an early item and placed all subsequent response marks in the wrong rows on the response sheet. Evidence of such response marking behavior can be sought in the Item Response Report, which records all the student's responses and permits easy comparison with the keyed answers. Low scores may also result if a student omitted a large number of items. Because the CSAP measures are untimed and students are encouraged to attempt a response to every item, large numbers of omitted responses should seldom be observed except in cases where a student simply stopped responding, in situations where students were not permitted sufficient time to complete the measures, or as a result of some unusual event. Very rarely are chance-level scores the result of pattern marking (a student's marking successive responses in repetitive patterns: A, B, C, D, A, B, C, D, and so on or A, A, A, B, B, B, C, C, C, and so on).

What should you do if you encounter a score at or below chance level about which you have some question? The first thing to do is to look at the student's responses as recorded on the self-scorable copy retained by the student or as reported on the Item Response Report. Look for anything that seems unusual. Did the student accidentally skip an item and mark all subsequent responses in the wrong rows of ovals? Did the student omit many items even though the measure was untimed?

If there is no evidence of any of the problems suggested above and you are still concerned, check the student's prior performance on other standardized tests. Is the CSAP performance out of line with performance in other areas? Did the student lose interest in the activity? If the response sheet is incomplete but shows evidence of early correct responses, why did the student stop work? If the answers to these questions are not readily apparent, ask the student.

If, after you've completed the above investigation, you have no satisfactory explanation, you might want to do the following. Near the end of the Skill Summary Report, you will find a table that lists the items that were answered correctly by 0-25, 26-50, 51-75, and 76-100 percent of the group. Divide the items into the easier half and the more difficult half. Then check the student's performance on the easy items and on the difficult items. If the student's correct responses are divided about equally between the easy half and the hard half, the student's score probably is a nonmeaningful, random score. If, however, the student answered more easy items than hard ones, it probably reflects a thoughtful, nonrandom performance.

If, after investigation, it appears that the student's response-marking process was appropriate, scores at or below the chance level should be interpreted as reflecting low performance on the measure under consideration. Such low scores, however, should always be verified by the person responsible for score interpretation.

Special Considerations in Score Interpretation

CSAP assesses skills and knowledge that are the product of formal and informal learning experiences over a long period of time. Scores on CSAP measures never completely reflect the skills and knowledge of any student, but this is particularly true for students believed to be educationally disadvantaged. Some students may find some of the skills and abilities represented in the CSAP foreign to their experience. Special care is advised in interpreting the performance of these students on CSAP measures.

Evaluating such students' career skills and designing skill-building experiences for them may require a special effort, and it is suggested that counselors and career education staff gather additional information about the students' career-relevant experiences and characteristics. Have they successfully sought and obtained jobs, either part time or full time? How successful has their performance been on the job? How much motivation do they exhibit? What information resources have been at their disposal?

Staff members should recognize that performance on English-language measures of students whose native language is other than English may be negatively influenced, especially by reading ability or lack of familiarity with certain career-related terminology.

Similarly, certain physical handicaps, such as visual or hearing impairment, are likely to depress scores on the CSAP measures. The career skills of students with such handicaps should be investigated in greater depth before any judgment is made about them.

An easy-to-read basic reference for persons who need to interpret test scores is **Test Scores and What They Mean**, 2nd edition, 1971, by Howard B. Lyman. It is available from Prentice-Hall, Inc., 301 Sylvan Avenue, Englewood Cliffs, New Jersey 07632 for $6.50.

A more advanced treatment of score use can be found in Leo Goldman's **Using Tests in Counseling**, 2nd edition, 1971, Appleton-Century-Crofts, 292 Madison Avenue, New York, New York 10017, $13.95.

Persons using test scores should also be familiar with the section on interpretation of scores found in **Standards for Educational and Psychological Tests**, American Psychological Association, 1200 17th Street, N.W., Washington, D.C. 20036. $3.50.

CSAP Summary Results Are Not Reported by Sex

The CSAP summary reporting service makes no routine provision for reporting results by sex. Variables other than sex are generally observed to be of greater utility in making intergroup comparisons. Attempts could be made to compare the performance of groups differentiated by variables such as socioeconomic status (parents' income, parents' educational level), type of prior educational experience (work-study vs. general curriculum), or exposure to guidance experiences (participation in a specific career guidance program vs. nonparticipation).

In general, it makes little sense to compare female and male group performance unless the results are to be used in planning specific skill-building

experiences or in the conduct of a research study. In such cases, the Group Code provision on the response sheet Transmittal Form can be used to identify females and males. The person organizing the response sheets for central scoring can sort the sheets into female and male groups. Separate Transmittal Forms can then be prepared for each group of response sheets with females coded, for example, by Group Code 01 and males by Group Code 02.

Local Norms

Assessment results can acquire additional meaning by comparing an individual's scores with those of a relevant reference group. If you want to know how well an individual performed in relation to a group consisting of people with similar background and experience, local norms can be constructed. To the extent that local curriculum, local environment, and the general ability level of the student body influence student progress, other students exposed to these same conditions are the most appropriate reference group against which to measure that progress. Because of the considerable diversity in instructional programs and environmental influences across the nation, no national norms are provided for CSAP.

Local normative data are useful for institutional purposes such as studying the performance of groups of students, planning curriculum and instructional programs, and gauging the progress of individual students. Local norms focus on the specific group of students with whom the instructional staff is concerned and represent student performance in an educational setting with which the instructional staff is familiar. The total group can be separated into subgroups that differ from one another in important respects. For example, comparisons may be made between curriculum programs, or between groups of students who have been exposed to career education programs and students who have not. These comparisons should not be interpreted as cause-and-effect, however. The initial self-selection of students into programs may yield substantial score differences that should not necessarily reflect on the quality of programs being compared.

All the scores used in the computation of local norms should be obtained from comparable groups of students at the same grade level. All scores need not come from the same administration; they can be accumulated over a period of several years (as might be necessary in schools where participation in the assessment program is limited), provided that conditions such as content of instructional program and composition of the student body do not change. The data base should be the scores of 200 or more students. Norms can be based on smaller numbers of students, but the larger the group, the more stable the norms will be, other things being equal.

The CSAP Frequency Distribution Report may serve as a local norms table if the report includes all students in a particular grade level or if the subgroup covered by the report is representative of the larger group. Subgroups, such as individual classrooms in a school, are unlikely to be representative of an entire grade. Data from a subgroup, therefore, can be used to plan programs for that group but cannot be reliably used for any other group or for an entire grade or school. However, you can construct your own local norms table by combining the data from several classrooms that together make up an entire grade level or a group representative of that grade level. Instructions for constructing local norms appear in Appendix D.

IV. Using CSAP In Improving Career Education and Career Guidance Programs

This section outlines possible uses of the CSAP for improving career education and career guidance programs.

Developing an Objectives-Based Career Education or Career Guidance Program

What career skills and knowledge should be the desired outcome of a career development program? How can a school staff assemble evidence that a career education or career guidance program produces desired changes in students' skills and knowledge in the area of career development? Without established program objectives, these questions are difficult to answer.

Accountability in Pupil Personnel Services: A Process Guide for the Development of Objectives presents four major steps that are involved in the development and operation of an objectives-based program. These are:

"1. Develop specific guidance objectives stated in terms of measurable outcomes to be attained by the students. These objectives should be based on assessed student needs or on student needs perceived by pupil personnel services.

"2. Select and present to the students experiences and information designed to assist them in attaining each desired outcome.

"3. Assess the performance of the students to determine the effects of the guidance experiences and to identify students who did not attain one or more desired outcomes.

"4. For students who did not attain one or more outcomes, provide additional experiences to promote attainment of outcomes."*

Specifying Career Development Objectives

A set of objectives can be assembled from a variety of sources: a careful examination of the learning outcomes expected in exemplary programs, completion of an assessment to determine the career development needs of a student group, and statements of objectives that appear in the professional literature.

Career objectives listings are useful in guiding the selection and planning of program activities and in facilitating assessment of outcomes. Therefore, each career development objective must be stated clearly enough to permit identification of skill-building experiences and resources and to answer the question of whether or not the objective was attained.

The education literature suggests formats for writing clear statements for learning objectives. The California Personnel and Guidance Association monograph quoted above includes a Situation, Population, Outcome, Process (SPOP) format for providing a complete statement of an objective:

"1. SITUATION	Where will attainment of the desired outcome be assessed? What are the characteristics of the school and community which affect the Population and/or have implication for process and outcome?
"2. POPULATION	Who comprises the target group? What are the characteristics of the Population?
"3. OUTCOME	What is the desired behavior to be acquired by the target group? To what degree is the desired behavior to be achieved and by what percent of the total group?
"4. PROCESS	How and when will the target group acquire the desired behavior? That is, what guidance related activities will be employed to implement the desired outcomes?"

The monograph provides further elaboration of each component in the SPOP procedure.

*Accountability in Pupil Personnel Services: A Process Guide for the Development of Objectives, Howard J. Sullivan and Robert W. O'Hara, eds., California Personnel and Guidance Association Monograph Number 3, 1971. Available from California Personnel and Guidance Association, 654 East Commonwealth Avenue, Fullerton, California 92631, $5.

CSAP Specifications Outlines

The SPOP procedure is designed for outlining who, what, when, where, and how for each objective. The CSAP is designed for integration with objectives-based career education and career guidance programs. Each item in the six CSAP measures is linked to a specified student outcome or learning objective. These objectives are stated in the Specifications Outlines (pages 54-70). Each CSAP objective statement focuses on the "what" element, since the "who, when, where, and how" elements must be locally determined.

The six content areas included in the CSAP were identified after a thorough review of existing published and locally developed curriculums, as well as documents such as **Objectives for Career and Occupational Development** (National Assessment of Educational Progress, 1971), **An Introduction to Career Education: A Policy Paper of the U.S. Office of Education** (Hoyt, 1975), **Career Education: A Curriculum Design and Instructional Objectives Catalog,** (Dunn et al., 1973), and career development goals and objectives statements gathered from local school districts, community colleges, and state departments of education. The identified content areas were judged to be primary elements in existing career education and career guidance programs. (See page 40 for further information on how the CSAP content area specifications were developed.)

The CSAP measures were constructed from specifications based on a broad sample of the instructional components now included in carefully designed career development programs throughout the country. For some, the program may seem too traditional; for others, it may seem avant-garde. However, all users can benefit from a careful examination of the specifications for each CSAP measure in order to compare these outlines with the objectives considered important by a particular school or college. CSAP objectives that seem useful and valuable may be incorporated into local objectives lists.

Identifying Skill-Building Resources

Once learning objectives and outcomes have been specified, procedures and resources to achieve the desired outcomes must be identified. The bibliography on pages 77-94 includes skill-building resources that are relevant to the six CSAP content areas.

Readers are cautioned not to consider either the CSAP Specifications Outlines or the bibliography as adequate guides for a comprehensive career development curriculum. Although both could be useful elements in a comprehensive curriculum, they are by-products of the development of assessment procedures and **not** the result of a curriculum development effort.

STEPS IN DEVELOPING AN OBJECTIVES-BASED CAREER DEVELOPMENT PROGRAM*

"1. Develop the Objectives for the Program
   a. Derive the objectives from current programs, use of needs-assessment procedures and/or external sources.
   b. Determine that all desired functional levels, developmental levels and domains are represented in the program.
   c. Determine that consistency exists at each of the four levels of responsibility: policy, program, operational, and behavioral.
   d. Write each program objective in the SPOP format, taking care to ensure that (1) the outcome is directly measurable in its stated form, and (2) the process is designed to be as effective and inexpensive as possible in bringing about the intended outcome. If pre-specified performance standards are to be used, indicate the minimum acceptable level of pupil performance for the outcome.

"2. Implement the Process for Each Outcome
   a. Reveal the intended outcome to the pupil.
   b. Pretest to assess pupil attainment of prerequisite outcomes and the present outcome.
   c. Provide a means for the pupil to attain the information and practice needed to attain the outcome, if the pretest indicates that he has not already attained it.
   d. Provide a simplified means for monitoring pupil performance relative to the outcome until he has attained it.

"3. Assess Pupil Attainment of Each Outcome and Provide Additional Assistance as Needed
   a. Posttest to determine whether each individual pupil in the target population has attained the outcome.
   b. For pupils who did not attain the outcome, provide an additional appropriate process or repeat the initial process.
   c. If desired, re-administer the posttest to pupils who initially did not attain the outcome.

"4. Evaluate the Program and Incorporate Potential Improvements
   a. For each outcome, summarize posttest scores across all pupils in the target population.
   b. Identify the outcomes on which pupils did not attain the minimum acceptable level of performance.
   c. Identify potential process improvements for each outcome on which pupils did not attain the minimum performance standards.
   d. Incorporate the potential process improvements into the program for future use."

*From Accountability in Pupil Personnel Services: A Process Guide for the Development of Objectives, California Personnel and Guidance Association, 1971, p. 49

Assessing Student Needs in Career Skills and Monitoring Subsequent Progress

One of the most important applications of the CSAP is in helping students discover where they are in their development of career knowledge and skills and in encouraging and facilitating additional growth.

Conducting Student Needs Assessment

Effective program planning is often based on determining the needs of an individual or a group. Needs assessment guides the selection, presentation, and pacing of instructional experiences and materials.

The CSAP measures can serve as a source of data in a student needs assessment. The Item Response Report and the Skill Summary Report described in Section III permit easy identification of strengths and weaknesses of individuals and groups. In formally organized group guidance or career education courses, CSAP measures may be used as pretests to determine what students know and do not know, thus identifying areas for future instructional emphasis.

Needs assessment procedures can be simple or complex. Observed needs can be discussed by staff, and a survey or checklist can be developed to elicit student reactions. Students might be asked to expand on the items listed and rank the objectives in order of importance.

More complicated procedures involve parent groups, employer committees, board of education members, and representatives from business and civic organizations. Procedures for conducting needs assessment have been suggested in the professional literature. The results of statewide assessment programs or data from national surveys such as the National Assessment of Educational Progress may be used. CSAP results should always be supplemented and verified by data from other sources. The following caution should be observed:

"Test scores are powerful educational tools, but they are only tools. They will not give direct, complete answers to the practical educational questions that bother teachers and students. They will not point unequivocally to a specific course of action in a given set of circumstances. They may indicate that something needs to be done. They may provide data that will help in deciding what to do. But they will not make the decision." (Ebel, 1972, pp. 49-50)

Measurement results are best used to help staff make more informed, accurate, and dependable judgments. When staff judgments and assessment results do not agree, the difference should instigate further investigation.

Group needs may also be evaluated by comparing the performance of a group with that of similar groups in previous years. Is the group average going up or down? Is performance on a skill area or an individual item changing? A drop in performance may trigger plans for remedial experiences; conversely, an increase may encourage thought about enrichment activities.

Individualizing Career Guidance

Counselors can use CSAP results as a yardstick to help determine a student's current stage of development of career skills and knowledge in order to plan future career guidance experiences. The results can supplement counselor observation and appraisal of student behavior.

The Item Response Report, the Skill Summary Report, and the CSAP Specifications Outlines are of most use in diagnosing an individual's areas of strength and weakness. Performance on the skill areas for a CSAP measure may help to identify sources of difficulty. Performance on individual items may provide clues to the origin of problems. However, inferences so made are subject to the unreliability introduced through sampling and should be verified through further investigation. One investigative method might be to build local measures that focus on one skill area, perhaps using the CSAP objectives statements as a guide in developing questions. Less formal means of corroborating assessment results include interviewing, group discussion, or day-to-day observation.

Students who do well on the CSAP measures should not be left with the erroneous belief that they have mastered all there is to learn. Each of the six CSAP content areas offers suggestions for further skills development for students whose performance falls in the top quartile. Those who do poorly can be encouraged to master the basic material in the exercises and guides. Different learning experiences can be planned to meet the needs of students at different levels.

Because the measures are designed both to promote learning **and** to measure achievement, the assessment activity need not compete for time with other guidance or career education activities. The completion of a CSAP measure alone can be a rewarding learning experience that complements the career guidance process.

Using Results for Institutional Self-Study and Planning

CSAP results can be used as one of the criteria for evaluating the effectiveness of a program or a curriculum, and for planning staff development activities. If CSAP results show that students are not mastering certain skills, staff may decide to revise a curriculum to place greater emphasis on those skills, or to strengthen staff competence in developing such skills.

Identifying Bases for Curriculum Development and Instructional Emphasis

Student performance on CSAP measures may encourage, but should not dictate, a review of a school's career education curriculum that might focus not only on topics covered and materials used but might also examine the amount of time devoted to building certain skills.

Performance at a given grade level in successive years might help to provide evidence of the effects of curriculum changes. For example, if the same CSAP measures are administered each year at the same

time to students at a given grade level, successive annual group means might be used as baseline data for gauging the effect of curriculum changes. If the mean raw scores for all eleventh graders for three successive years on a given CSAP measure were 37, 38, and 37, for example, and introduction of a new curriculum produced a mean that was significantly higher, the school could conclude that the new curriculum probably led to improved performance (provided, of course, that other characteristics of the group, such as ability, motivation, and the like, remained stable).

In using CSAP for curriculum review and planning, performance data should be viewed as descriptive rather than prescriptive. Although student performance may reveal omissions in a school's curriculum, it does not follow that the curriculum should automatically be strengthened in that area if the faculty do not consider the area important. Performance results should stimulate discussion that may reaffirm or modify a school's goals.

Pinpointing Bases for Staff Development

Information about student performance on the CSAP measures may help develop among school staff a greater awareness of the wide range of individual differences within a group of students and suggest a need for changes in curriculum or guidance programs.

To effect these changes, directed staff development activities may be needed. A series of in-service training seminars on various facets of career development might be scheduled, for example, that could involve consultants from nearby university counselor education programs, regional service centers, or the state department of education, or perhaps a staff resource library might be established.

Staff development activities might be planned concurrently with other activities, such as the preparation or review of a statement of the career development objectives and expected outcomes of a program, or the preparation of a new career education curriculum. When staff have agreed on program goals and have determined who has primary responsibility for attaining them, they may want to upgrade their own skills. Substantial staff development resources currently exist on such topics as sex bias in career guidance, conduct of group vocational exploration seminars, development of local career resource centers, and use of community resources in career education. Effective suggestions on how to conduct staff development sessions may be found in a variety of textbooks.

As a result of effectively managed in-service training, experienced staff may pass on ideas and techniques to their associates. CSAP results may provide a basis for in-service staff discussions. However, the relative competence of individual staff members should not be seen as the major factor in performance differences among groups of students.

Conducting Evaluation and Research Studies

The CSAP may also be of use in conducting evaluation and research studies. Continued investigation is necessary to obtain answers to basic questions about career skills and how they can be developed. To date, information is still lacking about the characteristics and behavior of persons who successfully manage their careers as compared to those who experience recurrent career difficulties. Do persons who have experienced a comprehensive career education program show evidence of more satisfactory career management than do persons who have not had such experiences? Is there any relationship between level of knowledge of general career information and subsequent ease in obtaining employment? Do different types and levels of jobs require different job-seeking strategies? Why do some involuntarily unemployed persons find new employment quite readily, while others have great difficulty in locating and obtaining new jobs?

Although description of evaluation and research designs, validity studies, and research methodology is beyond the scope of this handbook, this section identifies a number of important considerations. Others may be found in the numerous textbooks on educational evaluation and research.

Evaluating Program Effectiveness

Few evaluation tools exist to measure student achievement in career education programs. For purposes of institutional self-study and planning, CSAP materials can help assess the effectiveness of curriculums, instructional methodologies, or programs.

High school and college staffs are aware of a growing emphasis on student career development and on the outcomes of career education in a general climate of accountability. Federal and state funding agencies now ask for evidence of whether and to what degree the stated objectives of career education programs are being achieved. Information about the outcomes of career education is an essential ingredient in a self-study conducted by an institution or by staff, so that program modifications can be based on both goals and results.

CSAP summary reports will help institutions to understand their students' scores. Comparisons can be made between groups of students who have been exposed to different career education or guidance experiences. Investigation of change in the impact of career education from one year to the next will add another important dimension to institutional self-study.

Using the CSAP in Formative and Summative Evaluation

CSAP materials are particularly well suited for use in formative evaluation, that is, evaluation that occurs when a program is being developed or is in operation. The goal of formative evaluation is program improvement. It permits feedback to staff and students on current progress and often results in alteration or re-emphasis of the program or instructional sequence before it is complete. Formative evaluation is particularly useful when a new career education program is about to be introduced. At such a time, the CSAP measures can be used to establish baseline information about the group's performance. The materials can be readministered to the same group at the end of

the program to determine whether growth has occurred. Or, the measures might be administered in successive years to groups of students who have completed the program. Provided that the ability and educational history of each successive class does not change appreciably, successive assessments could help reveal whether the program is producing the desired effect.

Although CSAP materials are probably most effective in formative evaluation, they also have application in summative evaluation, that is, evaluation activities undertaken at the end of the course, unit, or program sequence, in an attempt to judge the effectiveness of a completed or fully developed program or of two different programs.

Formative evaluation is probably of greatest utility in the day-to-day monitoring of the effectiveness of a career education program, because the results are typically used in planning program improvements. Furthermore, such procedures may also serve as summative evaluation in that they permit the evaluator to describe the effectiveness of a program at a given point.

Group Comparison Studies

Comparisons of group mean scores on a whole CSAP measure can be useful and interesting. However, if the concern is with guidance department self-study, or evaluation of a career education curriculum, more detailed information is essential. The skill area approach was developed to increase the ability of an institution to examine the performance of groups of students in particular areas of career development.

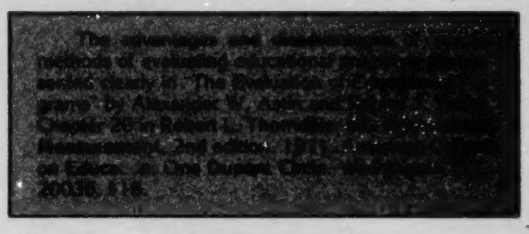
In the CSAP, skill area results are reliable for groups but not individuals. These subscore data result from clusters of exercises pertaining to a specific skill area from a larger area of career skills. Skill area data may encourage instructional staffs to establish mastery levels on particular aspects of a career education curriculum or program. Discrepancies between what is expected and actual performance may then be a further stimulus for self-study and planning. Procedures for establishing mastery levels are presented in Appendix E.

In comparing group performance differences, however, a school staff should keep in mind the general problem of comparing groups that may differ somewhat in background characteristics. Schools desiring more sophisticated analyses and interpretation of group performance differences on specific skill areas might use other data (such as aptitude scores) to adjust for differences in student ability. Standard textbooks on educational research methodology and statistical procedures explain how to conduct such analyses.

When the strengths and weaknesses of particular groups of students are known, many different responses are possible. One school might decide that a particular skill area is not important enough to warrant program emphasis. Another might examine ways to improve its career education curriculum. Others may wish to develop or encourage use of self-guidance activities at a career resource center. Still others might purchase books and kits of materials for the school library. Subscore data allow educational staff to go beyond single score comparisons.

Before any CSAP measure is used in evaluation, instructional staff should evaluate the appropriateness of the measure for their program. The existence of a skill area in a CSAP measure that is not emphasized in a particular career education program is no reason to reject the entire measure. When the skill area data are examined, the staff can discount student performance in areas not emphasized in their curriculum and add weight to student performance in areas that are more prominent.

Although CSAP results may be used as one source of data for evaluating program effectiveness, they should never be used as the only criterion. Too many factors in addition to program quality influence student performance. Such factors include the students' prior education and work experience, family attitudes and home environment, quality of staff and instructional resources, attendance record of staff and students, and the opportunities available in the community.



Using CSAP Item Classification Tables in Evaluation

In what skill areas are your students competent? In what skill areas do they need improvement? The Item Classification Tables (pages 71-76) and Specifications Outlines (pages 54-70) for each CSAP measure can help you to match exercises with objectives to pinpoint the topics your students need to work on. You may use them informally, simply looking up the classification of exercises that your class found difficult or controversial. You may also be interested in how one student group did on specific exercises in relation to a comparison group, and—still operating in a nonstatistical framework—check to see how the **percentage** getting an item right in the first group com-

pared to the percentage getting the item right in a comparison group. (Percentages can be obtained easily by referring to Table 1 on page 36.) These steps may provide you with all you need for program evaluation or modification. However, some CSAP users, because of their interest in research or evaluation, may desire to submit their data to a more detailed analysis.

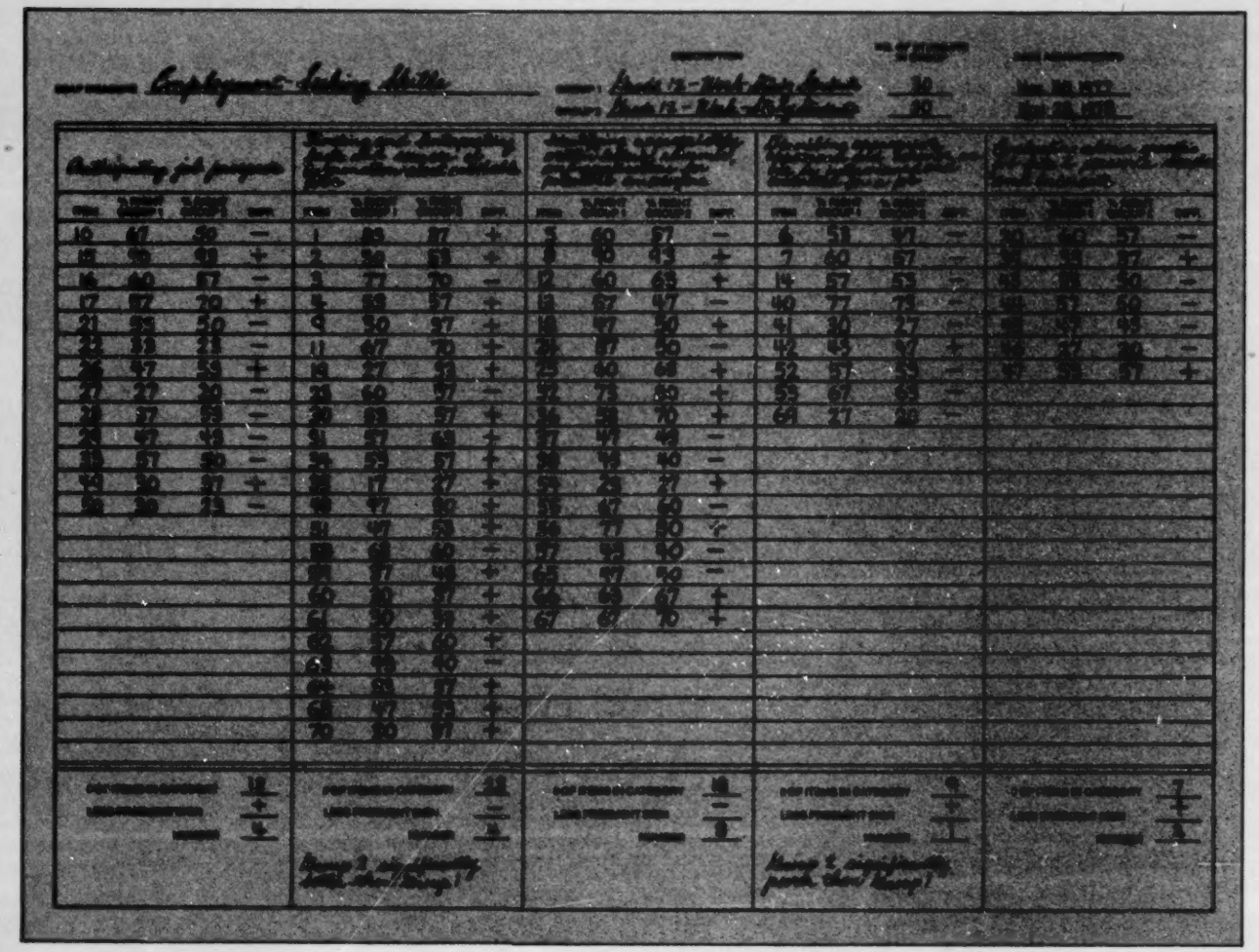
A Simple Technique for Identifying Significant Performance Differences between Groups

Using information from the Specifications Outlines and Item Classification Tables and the method outlined below, you can compare the performance of two student groups for each item category by performing a simple statistical test of the significance of any differences.

To carry out these steps most efficiently, you will need to complete a worksheet similar to that in Figure 10 in addition to your group count of correct responses.

1. Write the name of the measure, identification data about the groups being compared, and date of administration at the top of the sheet.
2. Rule off a wide vertical column for each category in the particular classification scheme in which you are interested. For example, the teacher performing the analysis of **Employment-Seeking Skills** in Figure 10 ruled off the five skill categories in this measure (see below). (It may be more convenient for you to prepare a separate sheet for each category.)
3. Within each category column (or sheet), rule off four columns for item number, percent correct in Group 1, percent correct in Group 2, and difference.
4. From the appropriate Item Classification Table on page 74, list under each category the number of each item so classified. In the sample worksheet (Figure 10), you will note that items 10, 15, 16, 17, 21, 22, 26, 27, 28, 29, 33, 49, and 50 were

Figure 10. Sample Analysis of Group Performance in Terms of Item Categories



listed under "Anticipating Job Prospects." Proceed to enter the specific item numbers under each of the remaining categories.

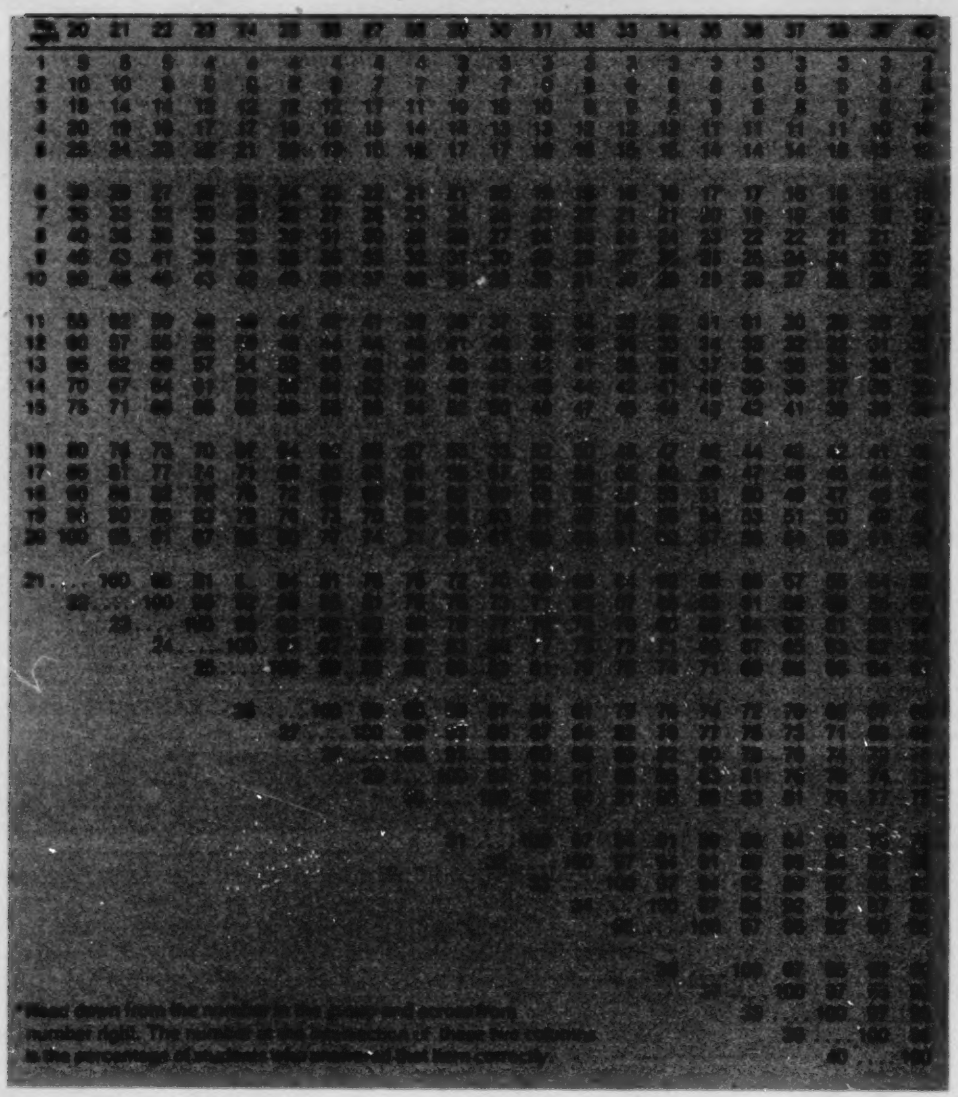
5. Next, enter the percentage of each group being compared that correctly identified the preferred response for each item. If you have CSAP summary reports for each group, you can easily find these percentages in the columns on the right-hand side of the Skill Summary Report. If you do not have CSAP summary reports and are preparing the analyses by hand, you will find Table 1 a useful shortcut in computing the percentages for the two groups.

   Referring to the group count of correct items, convert each number right to a percentage by looking it up in Table 1 or dividing by the number of students in the class. For instance, the teacher with the sample analysis found the column headed 30, which is the number of students in Group 2. For each item, this teacher looked up the number right on the left of the table and found the corresponding percentage in the 30 column.

   Fill in the percent right for each group for each item listed on your worksheet. **Be sure the figures you put on your worksheet are percent right, not number right, because all your calculations will be meaningless if you try to compare percents for one group with raw numbers for the other group.**

Table 1. Percent Right Corresponding to Number Right in Groups of 20 to 40*

Number of Students in the Group



*Read down from the number in the group and corresponding number right. The number at the intersection of these two columns is the percentage of students who answered that item correctly.

6. Working within each category on your analysis worksheet (as in the example), enter a plus sign for each item on which Group 2 performed better than Group 1 and a minus sign for each item on which Group 2 performed worse than Group 1. Note in the example that Group 2 did not do as well as Group 1 on 9 out of 13 items, performing better than Group 1 on only 4 of the items.
7. Count the number of times the plus or minus sign occurs in each column. (Under the first category in the worksheet example, there are four plus signs and nine minus signs. The plus is the less frequent sign.)
8. Table 2 will help you determine whether Group 2 did **significantly** better or worse than Group 1 on a particular set of items. In Table 2 find the **number of items in the category** and look across to the number in the next column Significant Number of Less Frequent Signs. If the number of the **less frequent** sign **equals or is less than** the number in that column, Group 2 is significantly different from Group 1, better if the less frequent sign is minus, worse if the less frequent sign is plus. (In the example, the first category contains 13 items. This figure was found in the first column of Table 2, and it can be concluded that the performance of Group 2 was not significantly different from that of Group 1 on the cluster of "Anticipating job prospects" items. Group 2 did better than the comparison group on the items in "Finding and interpreting facts and sources of information about available jobs": only 4 minuses out of 23 items.)

Table 2. Significant Numbers of Less Frequent Signs*

(To be used in connection with detailed analysis of your class performance in terms of item categories and norms sample performance)

Number of Items in Category	Significant Number of Less Frequent Signs	Number of Items in Category	Significant Number of Less Frequent Signs
1	—	31	9
2	—	32	9
3	—	33	10
4	—	34	10
5	—	35	11
6	0	36	11
7	0	37	12
8	0	38	12
9	1	39	12
10	1	40	13
11	1	41	13
12	2	42	14
13	2	43	14
14	2	44	15
15	3	45	15
16	3	46	15
17	4	47	16
18	4	48	16
19	4	49	17
20	5	50	17
21	5	51	18
22	5	52	18
23	6	53	18
24	6	54	19
25	7	55	19
26	7	56	20
27	7	57	20
28	8	58	21
29	8	59	21
30	9	60	21

*Significant at the .05 level. Table adapted from W.J. Dixon and A.M. Mood, "The Statistical Sign Test," **Journal of American Statistical Association,** 1946, Vol. 41, pp. 557-566.

The method outlined above provides a relatively simple means of checking for significant differences in the performance of two groups. Other statistical tests of significance may be found in most elementary statistics textbooks.

Limitations of the Program

Several limitations of the CSAP should be considered when it is used in evaluative or research contexts.

- Each of the CSAP measures correlates with a measure of verbal ability at about the .65 to .70 level. These correlations suggest that a principal factor influencing performance on the CSAP measures may be general ability or verbal ability.
- Because a major guideline during the program's development specified that each measure should be short enough to be completed by most students in one hour or less, most of the skill areas within a given measure have too few items to yield psychometrically reliable subscores for individuals. Thus, use of the measures for intensive diagnosis of individual skill deficiencies is limited by the content sampling in each skill area.
- The skill areas of each of the six CSAP content areas are not factorially pure. Nevertheless, it is thought to be useful for instruction and self-improvement to break down a large content domain into component parts, even though those parts may be highly intercorrelated.
- The CSAP measures are not designed to assess actual career-related performance. They are perhaps not unrelated to such performance, but no claim is made that CSAP performance will predict effectiveness in managing career development. What a person **knows** about various career-related concerns may or may not indicate what that person will **do** in life situations.
- At the present time, no evidence regarding criterion-related validity can be presented. Although such studies are being attempted, they are hampered by the relative absence of adequate criteria.
- The delineation of each of the CSAP content domains was derived in part from analyses of current educational practice, and not solely from a particular theoretical framework or other **a priori** considerations.

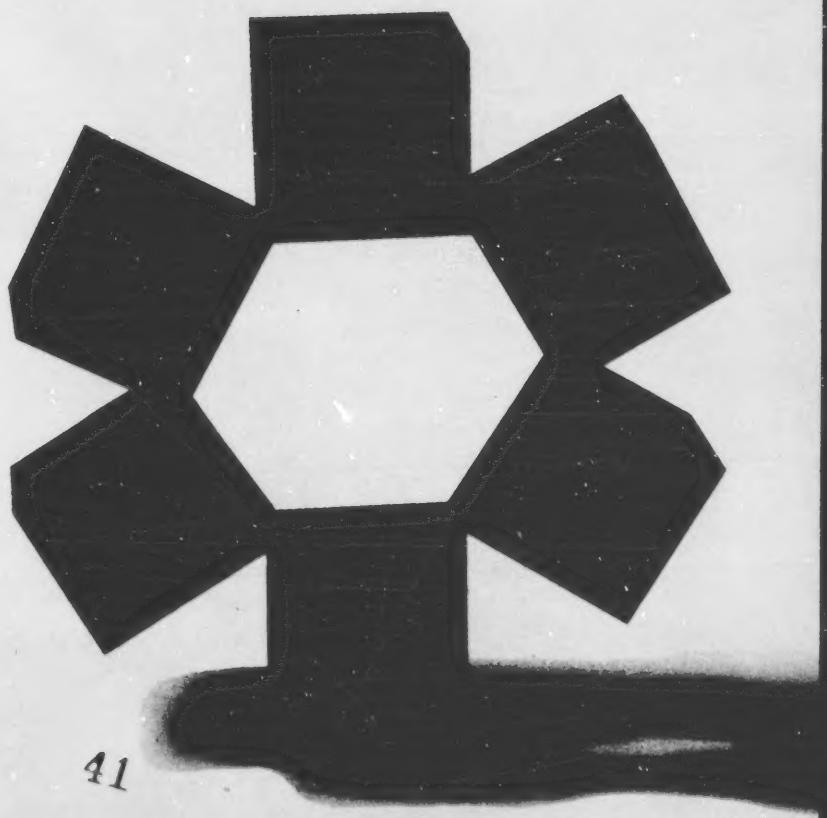
Avoiding Misuse of Career Skills Measures and Scores

The following inappropriate uses of the CSAP materials and results should be avoided:

- **CSAP results should not be used as a basis for predicting future performance.** CSAP results should be regarded as status reports. Because the knowledge and skills assessed by the program can be learned, current status does not indicate future status.
- **An individual's raw scores on different CSAP measures should not be compared.** The six CSAP measures do not yield a comparative skills profile and are not equivalent in difficulty. Similarly, an individual's percentile ranks on different CSAP measures should not be compared.
- **Group norms should not be used as standards that determine minimum competency levels.** Group norm data tell how the group performed, not how the group **should** perform. By definition, 50 percent of the individuals in any norming group will fall below the median. Comparing a person's CSAP results with the performance of others in the reporting group does not reveal whether the individual's score was above or below where it was expected to be or where it should be. Normative data help to describe in relative terms; they do not evaluate.
- **CSAP results alone should not be used to assign course grades in career education programs.** However, if a CSAP measure accurately reflects the objectives of a course, performance results may **contribute** to a course grade that also takes into account performance on course assignments and teacher-made tests, as well as other evidence.
- **Evaluation of teaching and counseling staffs should not be based on CSAP results.** Too many factors other than staff competency influence student performance. Student characteristics and background experiences differ greatly from one classroom to another and from one school to another. Performance expectations for different groups will differ accordingly.

PART B

Technical and Other Considerations



V. How the Career Skills Assessment Program Was Developed

The CSAP is a product of a Career Education Consortium composed of the College Board and the state education agencies of Georgia, Maryland, Minnesota, New Jersey, and Ohio. The Consortium, formally initiated in February 1975, decided to sponsor development of new methods and materials to help individuals learn more about their strengths and weaknesses in specific career development areas. These methods and materials would also provide institutions with information regarding group performance in these areas.

Subsequently, regional meetings were held with state and local educators in each of the Consortium states to identify more clearly the nature and content of the career education and guidance activities conducted in those states, and to learn what local practitioners felt was lacking in available instructional and guidance tools. In addition, a national questionnaire survey of secondary schools was conducted to gain an even broader picture of career education needs.

It was agreed by members of the Consortium and the project staffs of the College Board and Educational Testing Service (ETS) that career development concerns were too broad and varied to be assessed in a single measure and that the program should focus on career skills that could be learned and taught, so that individuals could be assessed for achievement of those skills.

Development of Content Area Specifications

The first step in development of the measures was the preparation of Specifications Outlines, plans that described in detail the content domains to be assessed. The project staff began by assembling courses of study, career guidance publications and resources, lists of career education objectives, reports and recommendations of national professional organizations, and opinions and suggestions of educational staffs and subject-matter experts. An intensive investigation of instructional materials used in teaching the specific career skills was completed and supplemented by a review of the professional career development literature. Using these resources, the project staff, in cooperation with Consortium representatives and a principal consultant, identified the six career development areas that were to be the focus of assessment.

Draft Specifications Outlines were then prepared and refined through consultant reviews. Each Specifications Outline identified the knowledge,skills, and abilities to be assessed, suggested sample tasks to be used in the writing of the items or exercises, and indicated what proportion of each measure was to be allocated to each content subarea. This information gave item writers guidelines on the number and kind of items to develop on each topic.

The final Specifications Outlines for the program's six content areas (see Appendix A) served not only as blueprints for the construction of each measure, but also as descriptions of the behavior or skill addressed by each exercise. Each Career Skills measure can only sample the career development objectives for that area.

Certain problems arise in linking objectives and exercises. Sometimes an exercise measures more than one objective. The number of exercises for a task or objective varies depending on the structure of the measure and the proportional emphasis given to that objective in the total measure. In reviewing each Specifications Outline, the reader should keep in mind that the outline is not definitive but represents one way of structuring a complex, amorphous set of interrelated, interdependent skills and abilities. A different formulation of the content domain and restatement of the objectives in another style might be equally appropriate and useful.

The style chosen for the CSAP is one that is commonly used for stating behavioral objectives. It expresses broad objectives and specific sample tasks in terms that are appropriate for the subject matter and for users of the materials. The criteria for evaluating each Specifications Outline should be its usefulness and meaningfulness to counselors and career educators as they attempt to identify aspects of individual career development for which they assume partial responsibility.

Indirect Measurement and the Problem of Sampling in Assessing Career Skills

When measures are used to assess abstract characteristics like career skills, it is important to have a clear appreciation of precisely what is being attempted. Many things cannot be measured directly

and, in such cases, their presence or absence, their amount or quality, are determined by inference.

Each CSAP exercise booklet is an indirect measure that involves a series of readings (one for every exercise in the measure) of various indicators of the skill or knowledge to be measured. The measure is indirect because it assesses a person's responses to a set of exercises rather than the person's behavior in real situations. Something about the skill itself must then be inferred from these responses.

Because the exercises in CSAP measures are only a sample from the universe of possible exercises, it must be asked how representative they are. To the extent that the exercises are **not** representative, any inferences drawn from an individual's performance on them may be subject to error. Is an individual's performance on a sample indicative of that individual's potential performance on other samples from the hypothetical pool of exercises that constitute the content domain? Can behavioral objectives and tasks adequately represent a complex behavior?

Sampling problems arise not only from the imperfectly defined and described universe from which they are drawn, but also from inability within a relatively short measure to sample at the same time both widely across skill areas and in depth within a skill area.

The sampling problem in assessing career skills, then, is one of finding representative tasks that will require use of a reasonable amount of the knowledge and skills in question.

Construction of the Exercises

All exercises are four-option, multiple-choice, with options lettered (A) to (D). Although many of the exercises have one correct answer, others call for either the best answer or multiple responses.

Established guidelines have been followed for vocabulary, difficulty level, question formats, and other technical matters.

Exercise Review and Editing

A committee of staff subject-matter specialists, sometimes supplemented by an outside consultant, reviewed each exercise after it was written. Each exercise had to be as free as possible of clues that might give away the desired response.

Special emphasis has been placed on avoiding questions that contained material offensive in content or wording to any minority or cultural group. Members of minority groups were involved in both exercise writing and review. Exercise tryouts involved groups with substantial numbers of minority students. No exercises were included that would be systematically answered incorrectly by minority group persons because of usage of words with different meanings for different ethnic groups.

Material that might be perceived as sex-biased was also carefully and systematically eliminated. Questions dealing with occupations were designed to avoid and counteract stereotypes and to include balanced proportions of occupations that are currently male dominant and those that are currently female dominant. Neutral occupations were used whenever possible. Male and female names were used in roughly equal proportions and use of the male generic pronoun was avoided.

Exercise Tryouts

The next step was assembly of two roughly comparable pretests for each content domain. Exercises were chosen for each pretest to represent different difficulty levels and the content subareas in the proportions designated in the Specifications Objectives. Special attention was given to sequencing the items, and to including balanced references to both sexes. Editors checked items for clarity, simplicity, and grammatical expression.

Each pretest was administered to approximately 600 students selected at random from grade 11 in participating school districts in the five consortium states. Tryout groups were drawn from a wide variety of school districts to help ensure representation of many kinds of students. The total tryout population included 14,686 students in 108 school districts in the five states.

The 20-minute verbal section of the School and College Ability Tests (SCAT) was administered to a sample of the students in the tryout group in an effort to determine the verbal ability of the group. The mean scores and the standard deviations of the sample group did not appear to differ significantly from those of the SCAT national norming groups for equivalent grades.

Construction and Tryout of Experimental Editions

After pretesting, exercises that did not yield proper psychometric results or were defective in structure were eliminated. Very difficult and very easy exercises were revised or discarded.

Three criteria were considered in selecting exercises for the experimental edition from those remaining in the tryout pool: (1) the specifications objective to which the exercise was linked; (2) the difficulty of the exercise, as judged by how many students answered it correctly in the pretest; and (3) the discrimination power of the exercise, that is, its ability to separate students into high- and low-performing groups. In order to achieve high content validity for the whole measure, no item was included, even if it satisfied these three criteria, unless its content seemed appropriate to test specialists and content-area consultants.

The experimental editions of the measures represent a balance between an attempt to sample objectives from the career skill area specifications adequately and the desire to satisfy certain psychometric considerations.

The exercises were then arranged in a sequence that assured an interesting and varied flow of content, type, and difficulty, beginning with some relatively easy exercises to avoid possible discouragement. The exercises were again reviewed and edited for clarity, style, and brevity. Then each experimental edition

was tried out with approximately 1,500 students, 500 each in grades 10, 11, and 12.

Readability of the Materials

Analyses of the reading levels of each of the six CSAP exercise booklets were performed using three different indexes of readability: the Flesch Reading Ease Formula, the Fry Graph, and the Dale-Chall index. For the student guides, only the Flesch index was computed. Each of these indexes takes into consideration two variables, sentence length and word difficulty. Sentence length is defined in terms of the number of words per sentence. Both the Flesch and Fry methods use the average number of syllables per word as the measure of word difficulty. Dale and Chall count the proportion of uncommon words, that is, the proportion of words not appearing among the 3,000 most common words in the English language.

The Dale-Chall (1948) formula was selected because it is commonly used, and because validation studies have produced among the highest and most consistent correlations with a variety of criteria. The Flesch index (1949) was chosen for each of the guides and the exercise booklets because it is one of the most widely used indexes of readability, and data are available on its validity. Because it is easy to determine readability from the Fry Graph (1968), the Fry estimate was also used to analyze the exercise booklets.

In order to measure sentence length, phrases and single words, which often form the exercise alternatives, were excluded. In the CSAP exercises, many stems are questions and the alternatives are complete sentences. They were therefore included in the analysis. Structural elements such as "Knowing facts about career opportunities" were also counted as sentences because they were judged to contain a complete unit of thought and were generally crucial to understanding. Fragments such as "II and III only" and "Grocery store cashier" were not counted as sentences. In a sentence completion exercise, only one of the alternatives was selected at random to finish the stem, and the resulting sentence was analyzed.

In those booklets containing a relatively large amount of reading, a spaced sample of pages was selected to be analyzed. On the average, 220 sentences (3,088 words) were analyzed from each set of exercises, excluding the introduction and instructions.

Table 3. Reading Grade Levels of CSAP Exercise Booklets

Table 3 shows the results of the three readability estimates for each of the six sets of exercises. Comparison of results from the three methods shows fairly good agreement, the differences being no more than two grade levels for any particular set of exercises. On the average, the Career Awareness Skills exercises appear to demand the greatest reading ability, while the Work Effectiveness Skills exercises require the least. The guides were analyzed in their entirety, with the Flesch index, and the results are shown in Table 4.

Table 4. Reading Grade Levels of CSAP Guides

It must be remembered that all the traditional reading difficulty measures give only approximations based on limited information. Clearly the readability or "comprehensibility" of a sentence, passage, or exercise depends on a great many things other than word difficulty and sentence length, particularly in material intended for high school or adult levels. The fact that the traditional measures of readability do not deal with the structure or meaning of an item must therefore be kept in mind when these estimates of readability are being interpreted.

VI. Statistical Characteristics of the Measures

This section of the handbook presents data essential for an adequate interpretation of a score on a CSAP measure. The discussion focuses on these questions: What do the scores mean? What is the appropriate interpretation to be placed on any score? What inferences can be drawn from the score? To help answer these questions, three types of data are provided: data on the precision or consistency of the measurement; item analysis data; and data on the performance of various groups. Validity considerations are also discussed.

Score Precision

Unless an instrument measures consistently, that is, unless an individual would obtain the same, or almost the same, score on repeated administrations of the instrument, little faith can be placed in the results obtained. The precision of a score on an assessment measure, however, is limited in part by the number of questions included in it and the amount of time an individual is given to answer them. Moreover, individuals will perform at different levels on different occasions for reasons quite unrelated to the characteristics of the measure. Thus, the best possible measure can provide only an imperfect estimate of an individual's true achievement. The precision of scores is best described by the use of two statistical terms: standard error of measurement and reliability.

Standard Error of Measurement

The standard error of measurement indicates how much a person's scores can be expected to vary on repeated administrations of the measure. In mental measurement, there is apt to be a difference between reality and the results indicated by the measuring device.

Theoretically, if a person took an infinite number of equivalent editions of a measure, the different scores obtained would cluster around an average defined as the true score. The score a person actually obtains on any given occasion (obtaine l score) is, then, an estimate of this true score. The true score is free of accidental errors that can be introduced through a variety of sources and situations. The amount by which obtained scores typically vary from the true scores on any given measure is the standard error of measurement. Approximately two-thirds of the scores a person would obtain on repeated administrations of equivalent editions of a given measure would be within the range of one standard error of measurement above to one standard error below his or her true score on the measure.

In interpreting scores for a group, one may say for each obtained score that the person's true score lies within an interval extending from one standard error of measurement above to one standard error below the obtained score and expect the statement to be correct approximately two times out of three. Similarly, if the range is extended to include two standard errors of measurement above and below the obtained score, one would expect the statement to be correct about 95 times out of 100. For example, for the Employment Seeking Skills measure, which has a standard error of measurement of 3.24, approximately two-thirds of the examinees have true scores within 3.24 score points of their obtained scores, and approximately 95 percent have true scores within 6.48 score points of their obtained scores. Therefore, when interpreting scores on CSAP measures, each score should be considered as a range extending below and above the obtained score.

The standard errors of measurement for the CSAP measures are presented in Table 5. The statistics given are based on the item analysis population described on page 44.

Reliability

The reliability of a measure may be defined as the extent to which it yields consistently similar results. Reliability may be expressed as a correlation coefficient (see the Glossary), which indicates the extent to which an individual would achieve the same score from one administration of a particular measure to another. If a measure were administered to a group of individuals, the same measure given to the same group several days later, and the two sets of scores correlated, the resulting correlation coefficient would be an index of the measure's reliability. The reliability coefficient is expressed as a numerical value between 0 and 1, although in practice it is usually between .65 and .95 for measures of individual performance. The closer the reliability coefficient is to 1, the more free from extraneous error factors the scores on the measure can be considered to be.

Often, in practice, reliability coefficients are not derived by a test-retest technique because it is not possible to overcome the effects of practice on the second administration, and for other practical reasons. Instead, the reliability coefficient is usually computed by analyzing statistics for individual questions from a single administration of the instrument; this method yields an index of internal consistency. Such indexes answer the question: To what degree are the questions on the measure interrelated? A high relationship suggests that most of the questions are measuring the same trait or the same combination of traits.

The reliability data presented in Table 5 are internal consistency coefficients computed using Kuder-Richardson Formula 20. KR-20 coefficients are influenced by variation in examinee performance due to content sampled and content heterogeneity; they do not take into account day-to-day variation in

Table 5. Statistical Characteristics of CSAP Measures*

*Data based on representative students in grades 10, 11, and 12 in five states: Georgia, Maryland, Minnesota, New Jersey, and Ohio. (See also "Item Analysis" below.)

the examinee's performance or in the administration setting. Internal consistency coefficients will be spuriously high if the measure is speeded (see the discussion of Item Analysis on this page for speededness data), and they will be spuriously low if the content is heterogeneous by design. Here, KR-20 estimates were consistent with the estimates of reliability obtained by summing the error variances for each skill area within a measure. This suggests that the content of each measure is, on the whole, homogeneous. The KR-20 estimates reported in Table 5 are based on the item analysis population.

Reliability estimates for the CSAP measures range from .85 to .93. The data in Table 5 serve to establish the general reliability of scores on the CSAP measures. Reliability coefficients of approximately .85 and higher may be considered reasonably satisfactory. However, score reliability is a direct function of the heterogeneity of the group to whom the measure is administered. Because the population on which these reliabilities were computed is likely to be more heterogeneous than local school populations, reliabilities for individual schools will typically run somewhat lower than those reported here.

Item Analysis

By means of a detailed program for analysis of pretest exercises, it is possible to assess the difficulty level and discriminating power, to select exercises of appropriate statistical characteristics, to diagnose sources of ambiguity and detect reasons for failure to provide adequate discrimination, and, in general, to exert a significant degree of control over the statistical properties of a given measure.

The data routinely produced in item analysis yield a variety of information regarding the behavior of any given item, and are particularly useful in making revisions. This information includes the number of people choosing each option of the item, the percent selecting the preferred response to the item, the number of people omitting the item, the number not reaching the item (presumably because of insufficient time), the mean total score on the measure for those choosing each option (as well as for those omitting it), and the number of people in each of five ability groups (as defined by the total score on the measure) choosing each option. From these frequencies and means, it is possible to determine, for example, whe-

ther the item is appropriately difficult for the group taking it and whether it is appropriately placed in the sequence of items in the measure. It is also possible to determine whether an incorrect option is sufficiently attractive to the less able examinees to be diagnostic, and whether it draws so many of the more able examinees that clarity of the item may be questioned.

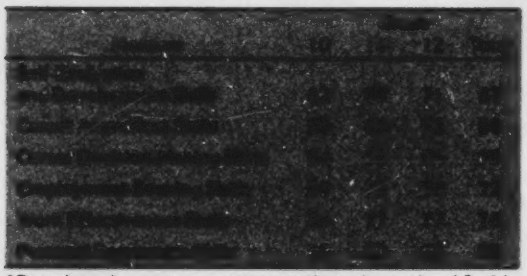
Although analyses of items yield a variety of information such as that described above, only two principal statistics warrant detailed comment in this handbook. These statistics are the indexes of item difficulty and item discrimination.

The item analysis sample for each measure was selected in the following manner. Each measure was taken by students in grades 10 through 12 in five states. The State Education Agency in each of the five states selected schools in which a measure was administered. Each State Education Agency was instructed to select schools representative of the types of schools within the state. Each school was instructed to select students representative of the school population. The measures were to be administered with no time limit. The resulting samples were general groups, whose members may or may not have had some career skills training, although not on these measures. Sample sizes for each measure at each grade level are reported in Table 5.

Difficulty of the Measures

One type of evidence concerning the difficulty of the measures is provided by the raw score means, or the average number right, of the item analysis samples shown in Table 5. Table 6 presents these raw score means for each item analysis sample, expressed as percentages of the total number of items in the measure. If all items are answered in a measure consisting of four-option items, middle difficulty corresponds to a raw score mean equal to 62.5 percent of the number of items, that is, halfway between nominal chance success and 100 percent. (See the discussion of chance-level scores in Section III.)

Table 6. Raw Score Means Expressed as Percentage of Number of Items*



*Data based on representative students in grades 10, 11, and 12 in five states: Georgia, Maryland, Minnesota, New Jersey, and Ohio. Sample sizes are reported in Table 5.

The data shown in Table 6 indicate that four of the six CSAP measures are easier than middle difficulty at all grade levels in the item analysis samples. Career Decision-Making Skills and Personal Economics Skills are consistently the most difficult measures at all levels, whereas Work Effectiveness Skills is the easiest for the tryout populations. Because all the measures are untimed and the proportions of unanswered items were relatively low, comparisons of these proportions with the expected middle difficulty value seem warranted. In grades 10 through 12, the measures should not be unduly difficult for most students.

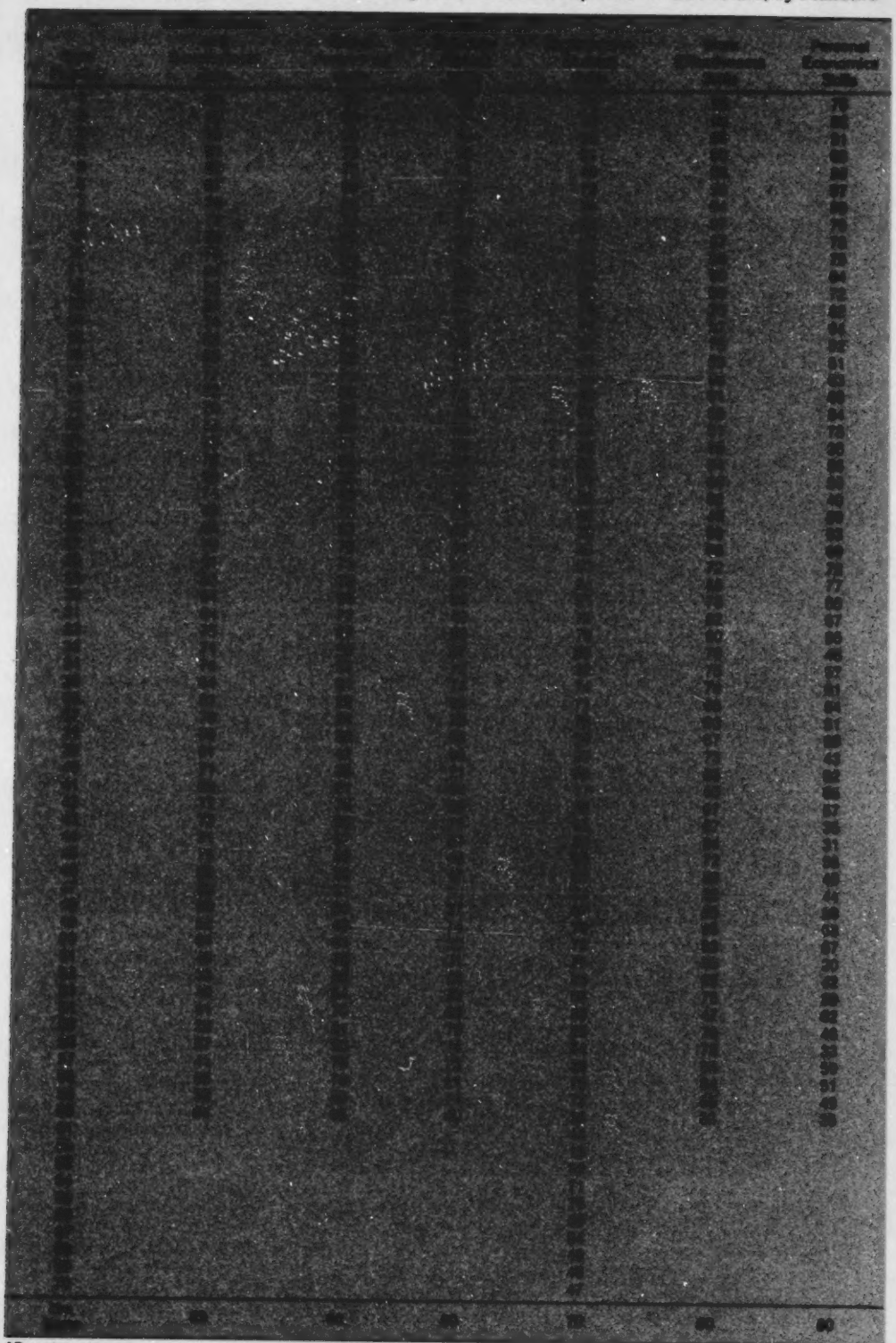
Determining what would be an optimum level of difficulty for measures like those in the CSAP series is a matter that is subject to disagreement and controversy. Should completion of an exercise booklet be designed to yield a feeling of success on the part of most respondents? Should the measure be designed to produce a significant gap between what most respondents now have mastered and what might be known in a given content domain in order to motivate students toward continued growth? Will respondents who do comparatively well on an easy measure become complacent about their relative degree of mastery of a certain set of skills?

Experts disagree on "ideal" difficulty specifications for such different types of measures as criterion-referenced versus norm-referenced, diagnostic versus survey, and those intended to reveal minimum competency versus those intended to maximize individual differences. Most achievement measures usually include a subset of relatively easy items to differentiate among the least able respondents and a proportion of very difficult items to discriminate among the most able respondents.

Measures containing a majority of items answered correctly by fewer than 50 percent of the respondents discriminate more sharply among the more able performers in a given group; such measures are more reliable than easier measures in making differentiations for purposes such as the award of scholarship funds. Such measures tend to yield distributions of scores that are said to be positively skewed (that is, few scores at the high end, and many scores at the low end of the score range). On the other hand, measures containing a majority of items answered correctly by more than 50 percent of the respondents tend to yield negatively skewed score distributions (that is, many scores at the high end and few scores at the low end of the score range) and hence discriminate more reliably among the less able performers in the group. See Figure 8, "Frequency Distributions of Raw Scores, by Measure." Distributions of scores on all Career Skills measures show most people getting well over half of the items correct. Thus the scores bunch more near the top of the possible scores, as the data in Table 8 suggest.

It was felt that the measures should focus on yielding information for criterion-referenced interpretation of a minimum competency type. Thus, greater attention has been placed on achieving a spread of scores at lower levels than at higher levels. It was also felt that the measures should be relatively easy and that it was more important to give less able students an opportunity for a successful experience than to provide the maximum challenge for the most able student.

Table 7. Percentages of Students Choosing the Preferred Response for Each Item, by Measure*



*Data based on representative students in grades 10, 11, and 12 in five states: Georgia, Maryland, Minnesota, New Jersey, and Ohio. Sample sizes are reported in Table 5.

For each measure, Table 7 presents the percentage of students choosing the preferred response for each exercise. These statistics were derived from the total-group item analysis samples. The majority of the exercises used in CSAP measures are of average to somewhat below average difficulty. In other words, a typical respondent will succeed on well over half of the exercises.

Distribution Characteristics

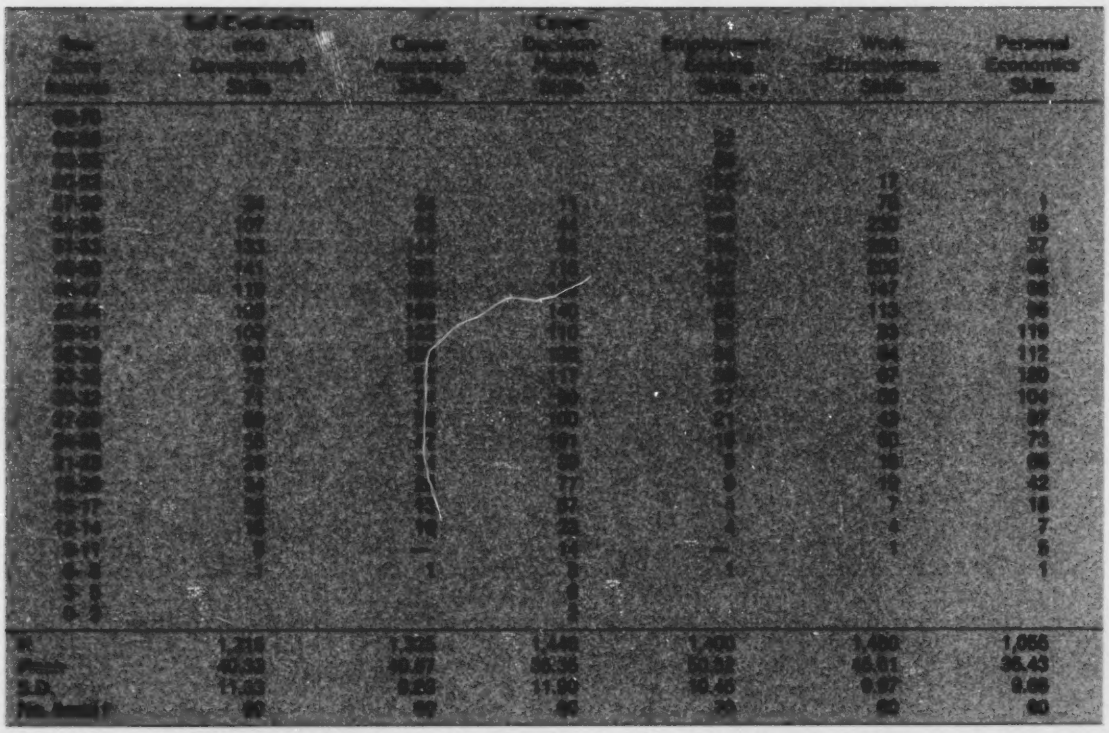
Detailed information concerning the appropriateness of the measures for the grades for which they are intended may be obtained by reviewing the frequency distribution of raw scores for the total-group item analysis samples shown in Table 8. In every instance, because the measures are relatively easy, it was found that the ceiling, or upper bound of the score range, was somewhat low for the more able respondents in the schools in the tryout samples, although there were no perfect scores in five of the six measures. In general, the measures provided an adequate floor for the less able students in the tryout samples. Relatively low proportions of students scored at or below the mean chance score (25 percent of the number of exercises). The highest percentage of students scoring at or below the mean chance score was 5 percent on Career Decision-Making Skills.

Users of the program should be aware that the relatively low ceiling of the measures is a structural feature of the program that must be taken into consideration if the measures are used in pretest-posttest evaluation models with relatively able populations, or with effective instruction based on materials in addition to those in the program. Use of the CSAP measures in such an evaluation model may not reveal the full impact of the intervention because of the absence of an extended range at the upper end of the score distribution.

Item Discrimination

An important characteristic of instruments designed to measure developed skills and knowledge is the effectiveness with which they discriminate between persons having varying degrees of such skills and knowledge. The biserial correlations between each exercise and the total score on a given measure provide indexes of the discriminating power of that measure. (See the Glossary for definition of biserial correlation.) Means and standard deviations of the biserial correlations, based on the total group item anal-

Table 8. Frequency Distributions of Raw Scores, by Measure*

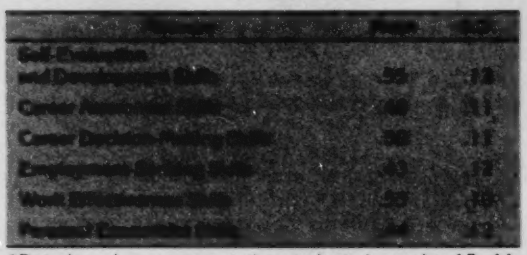


*Data based on representative students in grades 10, 11, and 12 in five states: Georgia, Maryland, Minnesota, New Jersey, and Ohio. Sample sizes are reported in Table 5.

†Note that the number of items is equal to the maximum score.

This is the **only measure that contains 70 items.

Table 9. Means and Standard Deviations of Exercises and Total Score Biserial Correlations*



*Data based on representative students in grades 10, 11, and 12 in five states: Georgia, Maryland, Minnesota, New Jersey, and Ohio. Sample sizes are reported in Table 5.

ysis samples for each measure in the CSAP series are shown in Table 9. The biserial correlations have means ranging from .43 to .55 and standard deviations ranging from .10 to .12. The size of the means of the biserial correlations indicates that these measures have better-than-average discriminating power.

Biserial correlation coefficients are useful for several purposes: to identify exercises during the construction and pretest stage that may be ambiguous, to evaluate the discriminating power of the exercises, and to provide a basis for checking on the degree of homogeneity among the exercises contained in the measure.

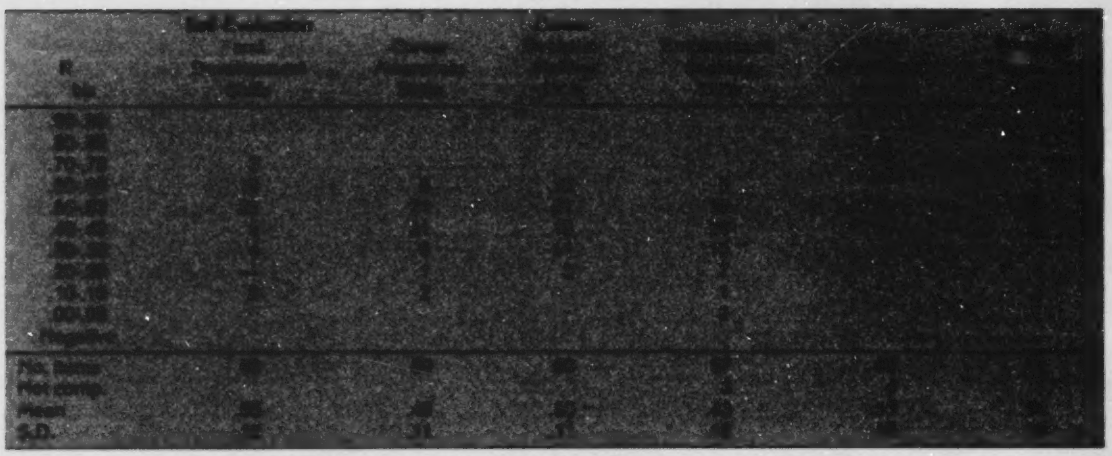
In general, higher biserial correlation coefficients mean more reliability for the total score on the measure. The lower the coefficient for a given exercise, the more reason there may be for suspecting that it is either ambiguous or inappropriate. For practical convenience, an arbitrary value such as .30 is frequently used for quality control, and any exercise having a lower value is identified for further scrutiny. However, an exercise with a low biserial correlation coefficient may contribute to the validity of an instrument that measures complex behavior. Because a certain degree of heterogeneity was regarded as desirable in the CSAP measures and was in part predetermined by the content specifications for each measure, some exercises with relatively low biserials were included in the measures. More detailed information pertaining to the frequency distributions of biserial correlations for each of the six measures may be found in Table 10.

Speededness

Another important characteristic of any instrument is the degree to which it is a measure of power rather than speed of performance. Because all CSAP measures are untimed, they should be measures of power if administered properly.

Table 11 shows the percentages of students in the total-group item analysis samples who reached the last item in the various measures, and the percentages of students who reached at least 75 percent of the items. An instrument may be regarded as essentially unspeeded if at least 80 percent of the students reach the last item and if virtually everyone reaches three quarters of the items. These data, indicating some speededness, reveal the fact that some schools in the tryout sample did not permit students to have sufficient time to complete the exercises and suggest the need for administrators to monitor students' progress more closely in completing their answer sheets. The problem of speed in the tryout data is not serious. However, it should be kept in mind when analyzing total-score and item data for the item analysis samples. For example, the percentages of students choosing the preferred response for each item (shown in Table 7) is somewhat lower for items at the end of each exercise booklet because the percentages are based on the total tryout population, not on those students who worked through to completion of the measure. Thus, the materials are probably somewhat easier than reported.

Table 10. Frequency Distributions of Biserial Correlations, By Measure*



*Data based on representative students in grades 10, 11, and 12 in five states: Georgia, Maryland, Minnesota, New Jersey, and Ohio. Sample sizes are reported in Table 5.

Table 11. Percentages of Students Completing Three Quarters and All of the CSAP Measures

Measure	Percentages of students reaching the three-quarter point	Percentages of students reaching the last exercise
Self-Evaluation and Development Skills	94	88
Career Awareness Skills	97	90
Career Decision-Making Skills	95	92
Employment-Seeking Skills	95	84
Work Effectiveness Skills	95	90
Personal Economics Skills	93	81

Validation

A measure may be used in many different ways, and validity as a concept pertains to use of a measure rather than to the measure itself. The measures in the CSAP series may be used for describing how much a student has learned, for identifying students for future participation in a particular skill-building experience, or for deciding which of several instructional approaches designed to develop career skills is most effective. Because each of these applications is based on a different interpretation, the evidence that justifies one application may have little relation to another. Validation thus calls for an integration of many types of evidence.

With a simple measuring device like a yardstick, validity is less of a problem. There is little doubt that, when used to measure length, it does so because there is little disagreement as to what "length" is. With measures like those in the CSAP series, however, establishing validity is not so easy, since they attempt to assess the complex qualities called "career skills."

Three types of validity may be distinguished: content, construct, and criterion-related. Content validity is evaluated by showing how well the content of the measure samples the subject matter or situations about which conclusions are to be drawn. Construct validity is evaluated by determining the degree to which certain explanatory concepts account for performance on the measure. Criterion-related validity is evaluated by comparing scores, or predictions made from them, with another variable considered to provide a direct measure of the characteristic or behavior of interest.

Content Validity

Since the CSAP measures are intended primarily as measures of developed skill and knowledge in six broad areas of career development, their content validities are of primary importance. Basic to the content validity of the program is the assumption that a certain core or critical mass of knowledge and skills is essential but is not sufficient to produce effective career development.

The measures in the CSAP series were constructed to reflect widely accepted objectives of career education in schools throughout the United States. No standardized measures, however well designed and constructed, can be suitable for use in all educational contexts. Local curriculum objectives must be taken into account.

The American Psychological Association has described one professionally accepted process for establishing the content validity of an achievement test:

"To demonstrate the content validity of a set of test scores, one must show that the behaviors demonstrated in testing constitute a representative sample of behaviors to be exhibited in a desired performance domain. Definitions of the performance domain, the users' objectives, and the method of sampling are critical to claims of content validity. An investigation of content validity requires that the test developer or test user specify his objectives and carefully define the performance domain in light of those objectives." (APA **Standards,** p. 28)

The procedures described in the APA **Standards** were used in developing the CSAP measures. The content validity of the measures will be limited by the extent to which the performance domain and the objectives are considered adequate. The objectives for each measure have been carefully specified and are given on pages 54-70. The objectives represent the judgments of content specialists, curriculum developers, and practitioners in each of those fields.

A key question in determining the content validity of each measure is whether the items used represent an adequate sample of the much wider range of possible items. This issue is of prime concern in assessing measures addressing aspects of career development, an area more ambiguous than many traditional domains of psychological testing. And because the program attempts to measure elusive aspects of knowledge and behavior, it is important to find out whether the materials do, in fact, measure the characteristics, attributes, and knowledge that are presumed to be the focus of measurement.

When the CSAP was being developed, a choice had to be made between in-depth assessment of a few skills or content areas and a more cursory investigation of a larger number of aspects of career development. A decision was made early in the development of the program to address a wide variety of content rather than limiting the assessment to a few topics or skills with sufficient sampling to yield a more precise measure. As a consequence, the frequency of sampling for any one topic or skill is low. For many areas, similar items could have been added to the measure to yield more precise information about the respondent's relative mastery of the area. However, presenting them in a measure would have increased its length as well as the time required to complete it. See Cronbach and Gleser's (1965) discussion of this dilemma regarding "narrowband" and "wideband" tests.

Construct Validity

Construct validation attempts to establish evidence of what an instrument is and is not measuring. It incorporates all types of validity evidence into a single, logically consistent network, consisting of constructs, observables, and their interrelations. In the psychometric context, Cronbach and Meehl (1955, p.

283) have defined a construct as "some postulated attribute of people, assumed to be reflected in test performance." Examples of constructs are intelligence, verbal aptitude, and those skills related to employment-seeking. Examples of observables are scores on tests such as the Stanford-Binet, the Scholastic Aptitude Test (SAT), and the CSAP Employment-Seeking Skills measure. Each of these instruments is believed to measure a particular construct.

Theory confirmation and instrument validation are interdependent. In order to demonstrate that an instrument provides a valid measure of skill in some career area, there must be (1) a well-formulated concept of how that skill is being defined (a well-defined construct), (2) a clear theory about how that skill shows itself in the real world, including what behaviors are indicative of that skill, and (3) instruments that detect that behavior.

One of the difficulties in establishing construct validity for the CSAP measures is that "career skills" consist of many constructs. This is suggested by the fact that each of the measures was designed as a "wideband" instrument. In order to conduct adequate construct validation studies, these multiple constructs and their interrelationships must be clearly understood. In addition, multiple measures of each construct must be available to assist in identifying it. Preferably, these multiple measures should be of different types, including tests, questionnaires, records of student performance, and the like.

Because a large number of skills enter into successful career planning and job seeking, the task of construct validation is particularly complex. Each set of CSAP exercises, because it is designed to cover a broad area of skills, may be multifactorial. In order to determine whether the factors, or constructs, are being successfully measured, extensive studies must be conducted. For this reason, complete construct validity information is not available at this time. Studies are currently underway to identify constructs more clearly, to establish their relationships to the CSAP exercises, and to determine how these constructs relate to academic ability, life experiences, and background variables such as race, sex, and socioeconomic status.

For measures like those in CSAP that resemble achievement tests, construct validity is closely related to content validity and to the philosophical assumptions on which the series is based. Construct validity considerations must also take into account the fact that individual measures in the CSAP series were defined in terms of instructionally meaningful areas of career development, not in terms of statistically independent psychological traits. Because the measures all involve cognitive activity and share a dependence to some extent on reading comprehension, performance on them can be expected to be intercorrelated.

Studies currently under way will provide data for preparation of a matrix of intercorrelations of the six measures. The resultant intercorrelation table will be presented in a future report, as will the results of other construct validity studies now under way.

Criterion-Related Validity

Criterion-related validity encompasses relationships between a measure and other indications (criteria) of present or future ability or performance. Relationships with present performance (often termed "concurrent" validity) are investigated to find out how a score on this measure relates to current ability and performance. Relationships with future performance (often termed "predictive" validity) are studied to find out whether scores on this measure predict future performance.

Criterion-related validity studies of career skills measures are hampered by the fact that usable criteria (other evidence of present skill or future performance) are either inadequate or nonexistent. As the APA **Standards** make clear:

"... the logic of criterion-related validity assumes that the criterion possesses validity. All too often, tests are validated against any available criterion with no corresponding investigation of the criterion itself. The merit of a criterion-related validity study depends on the appropriateness and quality of the criterion measure chosen."

"... a reasonably valid, uncontaminated, and reliable criterion is assumed in criterion-related validation. If such a criterion measure cannot be developed, criterion-related validation is not feasible."

The point to be made here is that even if valid criterion measures were available, criterion-related validity studies of career skills measures would have limited relevance. The CSAP focuses on what a person knows and can do, but possession of knowledge and skills that are of potential use in career development is no guarantee that they will be applied in day-to-day life activity. For example, knowing what would be effective behavior in an employment interview provides no assurance that such behavior will be demonstrated in an interview situation. Accordingly, some students may deal effectively with textbook situations but may not know where to begin in examining their own lives or applying formal decision-making strategies to complex personal situations.

In career education, as in driver education, basic facts and concepts can be taught, but knowledge of these cannot assure satisfactory future performance. In much the same way as a written driver's test may reveal a person's knowledge of key laws, facts, and rules of the road, career skills measures may reveal knowledge of certain facts and possession of particular skills related to career development. As in driving, actual behavior and performance in real-life career situations must be observed before conclusions can be drawn about competence. Career development skills are considerably more difficult to assess than driving skills, since these skills embrace a wide variety of behavior manifested over a long period of time.

The state of the art in career development research is such that considerable disagreement exists over what would constitute adequate outcome variables or criteria. What characterizes good decision-making behavior? Should career decisions be evaluated on their outcomes when those outcomes are subject to myriad influences and circumstances over

which the decision maker often has no control? Or should they be evaluated on the basis of the process or strategy used by the decider? To date, no description of the specific criteria of career competence has been generally accepted within the field.

In the absence of firm evidence and professional agreement about the criteria of career competence, career education and vocational guidance have relied on consensual assumptions that have been made on the basis of the skills and understanding considered useful when approaching complex career tasks. Because CSAP relies in part on such consensual assumptions and has not demonstrated a relationship between performance on its measures and successful management of career tasks, use of the program materials and results should not extend to making claims about students' future behavior.

A variety of criterion-related validity studies using CSAP are of interest. For example, since the CSAP measures resemble achievement tests in many ways, are they sensitive to instruction? Would students who are given specific instruction in one of the CSAP content areas show evidence of gain in CSAP scores over a control group of students who have not received such instruction?

Teacher ratings of student proficiency in career skills might be developed, particularly those that include behaviorally anchored ratings, and their relationship to performance on CSAP measures investigated as a form of concurrent validity. But it is useful to note that supervisor ratings have been notably unreliable in a variety of studies in which they have been used.

Schools that conduct systematic follow-ups of graduates and school-leavers might compare student performance on CSAP measures with information about subsequent employment status and educational experience in such areas as characteristics of jobs obtained in the form of level, skill area, starting salary, etc., and characteristics of further education to be undertaken by the student in terms of level of institution, area of training chosen, etc. Specifically, it might be useful to compare prior CSAP performance data for persons who have experienced chronic unemployment or other disruptions with performance data for students whose employment experience has been more stable and productive. "Ideal" criterion data for investigations of predictive validity—in the form of post-graduation vocational and educational performance outcomes—are likely to be scarce because of the costs and effort involved in gathering such follow-up data. However, where meaningful data are collected routinely, it would be useful to use them in an exploratory fashion in CSAP validation studies.

Designing and Conducting Local Content Validity Studies of the CSAP

If a career education staff wants to select a measure to assess student attainment of career skills, it will want to identify and use a measure that best corresponds to the content of its school's career education program or to its conception of the career skills students should possess. The extent to which a measure assesses **what it is being used to measure** is its validity. Because a career skills measure may be used by different schools to measure achievement in different career education programs, its validity will vary from one school to another, and because career education as a field is evolving and is interpreted differently from location to location, the validity of any assessment materials should be carefully studied before they are used in a particular program.

Schools can conduct their own content validation and decide the degree to which the CSAP materials are appropriate for the uses to which they will be put in their own career education programs. Use of the materials for evaluating the effectiveness of an instructional program, for example, will require a different type of concern with content validity than will use of CSAP for self-assessment in an attempt to expand awareness and build certain skills.

A manual detailing procedures for designing and conducting local content validity studies of CSAP is being developed and will be released at a future date. This section outlines in brief form some of the considerations that will be discussed at greater length in the manual.

Two questions that are fundamental to establishing content validity can be raised. Does the measure cover a representative sample of the specified knowledge and skills? Does the measure completely cover the domain to be assessed, and does it cover that domain with appropriate proportional emphasis on each of its subareas? Is performance on the measure reasonably free from the influence of irrelevant variables? One additional question that might be asked is to what extent do experts agree on the concepts and principles underlying the measure?

Comparisons between the CSAP materials and the objectives and/or materials of a particular school's program can be made in four ways.

1. To what extent is the content of a particular set of CSAP exercises concurrent with the content covered by a local program? This question raises the issue of content relevance.

2. How well does the content of one or more CSAP content areas cover the entire content domain of the local program? This question addresses the issue of whether the CSAP materials are broad enough in content to encompass all the skills and knowledge considered important by the local program.

3. To what extent does the pattern of emphasis in the CSAP materials resemble the proportional emphasis in the local program? Comparisons between the CSAP materials and the program objectives and materials can show to what extent certain skills may be stressed more strongly in one than in the other.

4. How consistent is the theoretical and philosophical orientation of CSAP with that of the local career education or career guidance program? Insofar as the career skills domain is not strictly a body of facts but rests on certain assumptions, there must be a reasonable level of agreement about such a set of assumptions if CSAP materials are to be considered valid for a local program.

In evaluating the content validity of CSAP for a specific local use, it is unrealistic to approach the task by expecting complete correspondence. There will inevitably be some items on a CSAP measure that address objectives not included in the local program, and similarly no items to cover some local objectives. Thus, determining the extent of content validity of a given CSAP measure for a particular local program will always be a somewhat subjective matter.

In order to answer questions such as those identified above, some specific procedures need to be designed for local validation studies. The procedures described below outline in general terms what is involved. They will be treated in greater detail in a forthcoming manual. However, before any of these procedures is begun, the school must define explicitly the objectives of its own program. These objectives should be as detailed and specific as possible.

The first method of content validation involves construction of a set of tables through which CSAP specifications and proportional emphases can be compared with local program objectives and emphases. Sample tables and detailed computational instructions will be contained in the forthcoming manual. From such analyses, it is possible to estimate the extent of correspondence between CSAP and local program objectives, as well as to locate those specific areas in which there are differences in emphasis between CSAP and the local program.

Another method of content validation can be used to analyze the similarities and differences between the philosophical and theoretical orientations of a local program and those of CSAP. First, everyone who is involved in the local career education program —its developers, teachers, counselors—should complete the set of CSAP exercises to be validated just as a student would. They should do this independently, delaying all discussion until the exercises have been scored. On a separate sheet of paper, participants should make notes about exercises that seem to them to be unclear or to have no correct answer or more than one correct answer. Intercorrelations of the teachers' scores provide a measure of agreement between teachers on actual answers and an indication of the internal consistency of the local program itself. If participants disagree about which alternatives they endorse, they must resolve their disagreement before their responses as a group can be compared with the CSAP preferred responses.

Once the staff differences of opinion have been resolved, the responses are scored and the percentage of "items correct" is computed. If this percentage is quite high, then the local program philosophy is consistent with the CSAP philosophy. Detailed examples of these analyses and their associated computations will also be presented in a separate manual.

In a further analysis, career education staff members should carefully read each exercise and its associated item explanation in the student guide and rate each explanation on a four-point scale from "strongly agree" to "strongly disagree." The total score divided by the number of items gives some indication of the level of agreement between the local program and CSAP. If "strongly agree" counts 4 points, then an average score greater than 2.5 would suggest general agreement. Scores of 1 or 2 for some items, or an average score of 2.5 or less would suggest that the content of the local career skills instruction might in some ways contradict what the CSAP exercises are teaching and assessing.

All the local content validation procedures described above require analyses by teachers and other staff involved in the local career education program.

Informal interviews with a small number of students who have recently completed an exercise booklet can help to answer many questions about their responses to the exercises and may also reveal many unanticipated student reactions. It may be useful to discuss the exercises with several individuals and to use the information gained in designing a questionnaire to be administered to all who have taken the exercises. Results may provide useful insights into the ways in which students perceive the exercises and may also serve to corroborate the validation conclusions drawn by the teachers.

To compare student data with teacher data, some of the same kinds of questions need to be asked of students. For example, students can be given a list of local program objectives and asked whether they think the CSAP items are relevant. On an easily completed chart, the students could rate the items as "relevant," "irrelevant," "confusing," and so forth.

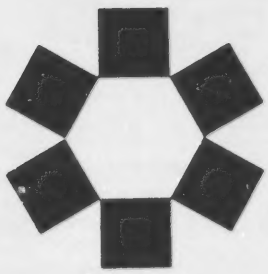
In addition to asking questions about the relationships between local program objectives and CSAP exercises, students can be asked for information that sheds light on some aspects of CSAP content validity that cannot be seen from the teachers' perspective. Questions that might be asked include whether students have learned anything they consider useful from completing the CSAP exercises and reading the guides, whether they think the preferred responses and item explanations are correct and realistic, whether they understood the general principles being taught, and whether the wording of the exercises was clear. From the questionnaire results, conclusions can be drawn about difficulties in reading and interpretation, clarity of concepts and principles presented, and the perceived relevance of such principles to real-life situations. All these issues have an important bearing on the students' understanding of and reaction to the exercises, and these factors are crucial to the validity of any instrument.

The CSAP was designed and constructed by assembling many of the best ideas available in career education nationally. A logical analysis of its contents as compared to local program objectives and emphases, using procedures such as those described here, will point out discrepancies. The greater the difference between local program objectives and the objectives measured by CSAP, the less valid the CSAP scores will be as indexes of attainment of the local objectives. However, CSAP usage in such situations may be of value, particularly to guidance directors and curriculum supervisors, in revealing for further discussion and analysis curricular omissions or discrepancies that otherwise might go unnoticed. In other words, it is possible for CSAP to be content-valid in a

general sense of national relevance and still be variable in its local relevance from one usage context to another.

In summary, validity is an indication of what an instrument measures and how well it does so. The validity of a measure cannot be reported in general terms. Rather, it must be determined in reference to the particular application for which the measure is being considered.

Comments on the experimental use of the program materials in validity studies are welcome. Program staff will cooperate as much as possible with users who are undertaking such studies and would like to receive reports of the results.



Appendix A: Specifications Outlines and Item Classification Tables

The following statements outline the specific abilities and objectives that are the basis for each of the six CSAP measures. They present sample task statements from which the exercises in the measures were developed.

Specifications for Self-Evaluation and Development Skills

I. Understanding individual differences

A. Students should be able to demonstrate understanding of terms and concepts used in describing individual attributes and be able to differentiate such attributes.

Sample Tasks

1. Given a set of statements that describe various behaviors, be able to identify those statements that describe social skills.
(Item 2)

2. Given a set of statements that describe various behaviors, be able to identify a statement that is the best example of an emotional reaction.
(Item 17)

3. Given a set of statements that includes examples of interpersonal, physical, and academic skills in use, be able to identify the statement that is the best example of using an academic skill.
(Item 56)

B. Students should be able to recognize the existence of individual differences, to identify plausible reasons for such differences, and to differentiate the relevance of different personal attributes for various life experiences.

Sample Tasks

1. Given descriptions of two individuals who have different interests and a list of background experiences, be able to identify the experience statement that best explains the difference in interests.
(Item 9)

2. Given a description of a person who developed strong reading skills and interest and a list of background experience statements, be able to identify the background experience that probably had the greatest effect on the development of the specified interest.
(Item 18)

3. Given a list of personal attributes, some of which are influenced by heredity and some of which are influenced primarily by environment, be able to identify those attributes that are most likely to be influenced by environmental conditions.
(Item 40)

4. Given a description of a situation in which a person expresses concern about the influence that various personal attributes and experiences may have in determining admission to a college, be able to identify those attributes and experiences that are most likely to be considered in college admissions decisions.
(Item 30)

5. Given a description of a situation in which an employer expresses a set of preferences about the personal characteristics of applicants for a particular job opening, be able to identify those characteristics or attributes that are the most essential for satisfactory performance in the specified job.
(Item 32)

6. Given a situation in which person A is expressing a concern to person B and a set of responses that person B might make, be able to identify the response that is most likely to be helpful to person A.
(Item 11)

II. Evaluating individual characteristics and understanding test results

A. Students should be able to make appropriate inferences and draw accurate conclusions from various descriptive data about the characteristics and observed performance of an individual.

Sample Tasks

1. Given an excerpt from a letter of recommendation, be able to answer questions that call for understanding or interpretation of the information presented.
(Items 27, 47, 48)

2. Given an excerpt from a written evaluation of an employee's work performance, be able to answer questions that call for understanding or interpreting the information presented.
(Item 7)

3. Given an excerpt from a student's school record, be able to identify from a list of possible inferences the most reasonable inference that can be made about the student's academic performance and the relevance of that performance for certain occupational goals.
(Items 38, 39)

4. Given a description of an employee's actions on the job and a set of statements excerpted from a supervisor's evaluation of the employee's work performance, be able to identify the statement that probably resulted from the described actions.
(Item 14)

B. Students should understand and be able to demonstrate correct usage of key principles

and concepts associated with standardized testing and the interpretation of test results.

Sample Tasks

1. Given a definition of percentile rank and a specified test score and associated percentile rank, be able to answer questions that call for understanding and applying the concept of percentile rank.
(Item 13)
2. Given a score on a standardized test and an excerpt from an interpretation booklet that presents the different percentile ranks associated with various scores for specified reference groups, be able to answer questions that call for understanding why the given score has different percentile ranks for the several reference groups.
(Item 53)
3. Given a description of a situation in which a job applicant receives a low score on a personnel selection test, be able to recognize that, without additional predictive validity information, no statement about future job performance can be made.
(Item 28)

III. Changing personal characteristics and behavior

A. Students should be able to demonstrate an awareness that certain personal attributes are subject to change through maturation and experience.

Sample Tasks

1. Given a list of statements about an individual that illustrate changes that have occurred in his or her characteristics or attributes, be able to identify those changes that resulted from experience or practice.
(Item 10)
2. Given an example of a person whose physical or athletic skills improved from a younger age to an older age, and a list of possible explanations for the change, be able to identify the statement that attributes the change to maturation.
(Item 15)
3. Given a list of personal characteristics and abilities, be able to identify those that are most likely to improve as a result of more practice or greater experience.
(Item 46)
4. Given a hypothetical conversation in which person A expresses discouragement about unsatisfactory performance in an athletic activity, and a list of possible responses that person B might make, be able to identify those statements that reveal awareness that the specified athletic skill is subject to change through maturation and experience.
(Item 25)
5. Given a description of a person who places high value on fairness in interpersonal relations, be able to identify from a set of statements the statement that presents the most likely explanation for the development of that value.
(Item 41)

B. Students should be able to demonstrate an awareness that certain personal attributes and behaviors are subject to change through the application of self-management skills.

Sample Tasks

1. Given a set of statements that describe a variety of personal characteristics, be able to identify the characteristics that can be modified through the application of self-management skills.
(Items 35, 58)
2. Given a situation in which two persons of comparable background and abilities achieve different results, be able to recognize that a higher level of achievement may result from harder or more persistent work.
(Item 22)
3. Given an example of a person who manifests a certain behavior (for example, poor study habits) and wants to change, be able to identify an effective self-management technique that would be useful in changing the specified behavior.
(Item 3)
4. Given an example of a person who reveals a lack of certain social skills and who persists in making negative self-statements as a result, be able to identify a substitute self-statement that would make the person feel better and potentially lead to improved social skills.
(Item 24)
5. Given an example of a person who wants to change a certain behavior, and a list of possible actions, be able to identify those actions that reveal the most commitment to change.
(Item 54)
6. Given information about a person's performance in a particular school subject, and a list of possible actions, be able to identify actions that might improve the skills involved in the subject.
(Item 8)
7. Given a description of a person who wants to modify a particular skill or behavior, be able to identify appropriate, useful actions (for example, stimulus control, arranging consequences) to achieve that goal.
(Items 34, 51)

IV. Locating and interpreting information about self

A. Students should be able to identify valid bases for appraising their own abilities and other attributes.

Sample Tasks

1. Given a description of a person contemplating college attendance who wants to

obtain information about how well he or she might perform academically in college, be able to identify valid bases for estimating scholastic aptitude and predicting future academic performance.

(Item 52)

2. Given a description of a person who wants to assess his or her potential emotional response to a particular work activity, be able to identify actions that would provide information about one's emotions.

(Item 23)

3. Given a description of a student who has to select a major but lacks information about his or her interests, be able to identify useful actions that would provide information about the student's interests.

(Item 55)

B. Students should be able to demonstrate awareness that one's own activities and the reactions of others are useful sources of information about oneself.

Sample Tasks

1. Given a description of a new employee who wants to find out how well he or she is doing and wants to improve, be able to identify useful actions to take to obtain feedback about work performance.

(Items 33, 59)

2. Given a situation in which a person (for example, a student) wants to give feedback to someone in authority (for example, a teacher), be able to identify an example of a direct yet tactful statement.

(Item 29)

C. Students should be able to interpret accurately data about interpersonal interactions.

Sample Tasks

1. Given a description of a job interview situation in which the applicant makes a series of statements that reveal a particular attitude or preference, be able to identify an inference that the interviewer is likely to make about the applicant.

(Items 36, 42)

2. Given a description of a person who wishes to make a particular impression on others, and some action or behavior that could be perceived by others as being inconsistent with that goal, be able to identify an alternate action that would be more likely to achieve the desired impression.

(Items 16, 44)

3. Given a description of a person's nonverbal behavior that represents a particular emotional state, be able to answer questions that call for identification of the specific emotional state and an indication of what difference the emotional state would make in approaching the person for help with a task.

(Items 19, 20)

4. Given a situation in which two people react differently to identical performance of a particular task, be able to recognize that there are alternative standards by which people evaluate performance and that some evaluative standards result in more positive feelings than do others.

(Items 4, 5, 6)

5. Given a situation in which an individual desires improved performance of a person in authority and an instance in which that person does something particularly well, be able to identify a form of feedback that would be most likely to increase the average level of that person's future performance.

(Item 45)

6. Given a situation in which one person receives nonverbal feedback from another person, be able to recognize alternate plausible interpretations of the nonverbal behavior.

(Item 57)

V. Applying knowledge about self to career opportunities

A. Students should be able to demonstrate understanding of the relationship between personal attributes and the performance of various work activities.

Sample Tasks

1. Given a description of a particular work activity and a list of self-statements made by different people that reveal their preferences or values, be able to identify the self-statement most likely to be associated with satisfaction in the specified work activity.

(Items 1, 26)

2. Given a description of a person with particular personality characteristics and preferences, and a list of work activity statements, be able to identify a work activity that would most effectively utilize or satisfy the individual's attributes or preferences.

(Items 43, 60)

3. Given statements of several work activities and a list of skill descriptions, be able to identify the skill that would be common to each of the work activities.

(Item 49)

4. Given a description of a person's interests and preferences, be able to identify from a list of work activity statements the activity that the individual would probably find most appealing.

(Item 37)

B. Students should be able to demonstrate understanding of the relationship between personal attributes and the successful performance of various educational activities.

Sample Task

1. Given a description of a person with partic-

ular characteristics and abilities, and a list of educational activity statements, be able to identify the educational activity that would allow the person to use his or her characteristics and abilities most effectively.
(Items 12, 31)

C. Students should be able to demonstrate understanding of the relationship between personal attributes and the satisfaction obtained from pursuit of various leisure activities.

Sample Task

1. Given a description of a person with specific preferences, be able to identify from a list of leisure activities those that the individual might find most appealing.
(Items 21, 50)

Specifications for Career Awareness Skills

I. Relating abilities, values, needs, and experience to career choices

A. Students should be able to differentiate career opportunities on the basis of the abilities and values that are associated with them.

Sample Tasks

1. Given an ability term and its description, be able to identify from a list of work activity statements those activities that require or utilize the given ability.
(Items 3, 18, 28, 42)

2. Given a set of abilities, be able to identify from a list of leisure activities those activities that would be associated with or utilize those abilities.
(Item 9)

3. Given a set of work activity statements, be able to identify from a list of value terms and their brief definitions the value that is most likely to be associated with the work activities.
(Item 1)

4. Given a description of a particular value that is important to a person, be able to identify from a list of work activity statements the activity that would offer the person the greatest opportunity to satisfy the given value.
(Item 27)

B. Students should be able to identify the experience requirements for various work activities.

Sample Tasks

1. Given a description of a type of work experience that a person has had, be able to identify from a list of work activity statements the activity for which the prior experience would be most relevant.
(Items 31, 58)

2. Given a description of a person with a specific occupational goal, be able to identify from a list of activities those that would provide relevant exploratory experience.
(Item 5)

3. Given a list of different occupations, be able to identify the occupations that may be entered with little or no prior work experience.
(Items 13, 45, 46)

4. Given a set of job titles in scrambled sequence, be able to identify the sequence usually associated with those titles.
(Item 26)

C. Students should recognize that certain needs, desires, and preferences may be satisfied through different occupational and leisure alternatives.

Sample Tasks

1. Given a description of a person with specified interests and preferences, be able to select from a list of occupations the occupations that would satisfy those preferences.
(Item 51)

2. Given a description of a person with a specified need or preference, be able to identify from a list of leisure activities the activity that would be most likely to satisfy the given need or preference.
(Items 33, 34)

II. Locating, evaluating, and interpreting information for career choices

A. Students should be able to identify and locate sources of information about various career opportunities and be able to interpret information from those sources correctly.

Sample Tasks

1. Given a brief description of an item of career information needed to assist in making a decision, be able to identify from a list of possible sources one valid source from which the information can be obtained.
(Items 2, 43, 48)

2. Given a situation in which a person wants to assemble a list of potential employers in his or her area for a specific field or industry, be able to identify the Yellow Pages of the telephone directory as the most convenient source.
(Item 52)

3. Given an excerpt from a career publication that describes typical earnings in a specific occupation in terms such as beginning earnings, increments, and peak earnings, be able to identify the correct interpretation of the excerpt.
(Item 29)

4. Given a chart or table from a United States Department of Labor publication that presents information on projected employment growth in various industries, be able to answer questions that call for accurate interpretation of the data.
(Items 38, 39)

5. Given an excerpt from a career publication that describes the impact of social and economic trends on future employment oppor-

tunities in a specific occupation, be able to identify an appropriate conclusion that can be drawn from the excerpt.
(Item 16)

6. Given a description of a person seeking information about financial aid for further education, be able to identify from a list of resources the one that would be most helpful in providing a wide range of information.
(Item 14)

7. Given a description of a specific type of financial aid, be able to identify the requirements and/or obligations associated with it.
(Items 36, 49)

8. Given a description of an individual with a specified occupational goal who is having doubts about his or her ability to achieve the goal, be able to identify from a list of possible actions the action that would best enable the person to find out about alternative occupations in the same general field.
(Item 20)

B. Students should be able to appraise published sources of career information in terms of currentness, accuracy, objectivity, and breadth of coverage.

Sample Tasks

1. Given a brief description of a particular type of career information publication, be able to identify a major limitation of the resource.
(Items 12, 41)

2. Given a list of different career information resources, be able to identify the resource that would be most likely to present biased or misleading information.
(Item 56)

III. Knowing facts about career opportunities

A. Student should be able to classify occupations systematically.

Sample Tasks

1. Given a set of occupations, be able to identify a characteristic that the occupations have in common.
(Items 8, 60)

2. Given three currently used occupational classification systems, be able to identify the appropriate category in each system for a particular occupation.
(Items 21, 22, 23)

B. Students should be able to differentiate occupations on the basis of their working conditions, remuneration, associated tools and equipment, and other distinguishing characteristics.

Sample Tasks

1. Given a list of occupations, be able to identify the occupation that would involve the greatest amount of physical danger.
(Item 32)

2. Given a list of occupations, be able to identify those occupations that involve primarily outdoor work.
(Item 30)

3. Given a brief definition of security and a list of occupations, be able to identify the occupation that generally has the most security.
(Item 47)

4. Given a list of occupations, be able to identify the occupation that involves the greatest amount of travel and time away from home.
(Item 44)

5. Given a list of occupations, be able to identify the occupation that involves the greatest amount of continual mental and emotional stress.
(Item 35)

6. Given an occupational title, be able to identify from a list the tools and equipment used in the particular occupation.
(Item 17)

7. Given a list of occupations, be able to identify the occupation that would involve the greatest probability of having to work irregular hours.
(Item 24)

8. Given a list of occupations, be able to identify the occupation that is most likely to involve uncertain income and competition for job openings.
(Item 4)

9. Given a list of occupations, be able to identify the occupation in which workers have the highest income.
(Item 57)

C. Students should be able to differentiate educational and leisure opportunities in terms of their distinguishing characteristics.

Sample Tasks

1. Given a list of types of postsecondary institutions, be able to rank them in terms of relative cost.
(Item 25)

2. Given a list of specific leisure activities, be able to rank them according to the amount of time, money, and effort required to pursue them.
(Item 50)

3. Given a particular type of postsecondary educational institution and a list of descriptive statements, be able to identify those statements that accurately describe the type of institution.
(Item 15)

4. Given a list of different types of vocational training opportunities, be able to identify the alternative that would permit a person to acquire job training and to earn an income at the same time.
(Item 59)

IV. Finding out about educational requirements for occupations

A. Students should be able to identify the education and training requirements of various occupations and the sources of such training.

Sample Tasks

1. Given a list of occupational titles, be able to identify those occupations that are typically entered through an apprenticeship.
(Item 10)
2. Given a list of work activity statements, be able to rank them from lowest to highest in terms of the amount of education or training required to perform them.
(Items 7, 40)
3. Given a specific occupational title and a list of different levels of education, be able to identify the level of education generally required for entry into the occupation.
(Items 53, 54)
4. Given a description of a particular type or level of education or training and a list of work activity statements, be able to identify the work activity for which the given training or educational preparation would be appropriate.
(Item 11)
5. Given the name of a course of study, a brief description of its contents, and a list of work activity statements, be able to identify the work activity for which the given course content would have the greatest relevance.
(Items 6, 37)
6. Given the title and a brief description of an occupation, be able to identify from a list of school courses the course that would have the greatest relevance for the given occupation.
(Items 19, 55)

Specifications for Career Decision-Making Skills

I. Defining the problem

A. Students should be able to recognize the existence of a decision problem.

Sample Task

1. Given a description of a decision situation that presents both relevant and irrelevant information, be able to identify the decision to be made.
(Items 37, 57)

B. Students should be able to state decision goals and objectives clearly.

Sample Task

1. Given a list of goal statements, some of which are clearly stated and some of which are imprecise, and a set of guidelines for deciding whether or not a goal statement is clear, be able to identify the goals that are least clearly stated.
(Items 3, 4)

II. Establishing an action plan

A. Students should recognize that career decision making is an active and ongoing but not irreversible process.

Sample Task

1. Given a description of a person already working in a particular occupation who decides that his or her occupation is no longer satisfying, be able to recognize that the person may change his or her occupational goals.
(Items 9, 12)

B. Student should be aware of the time element in decision making and of the importance of planning ahead.

Sample Tasks

1. Given a set of decision problems, be able to identify the one that deserves the greatest commitment of time in order to make a satisfactory decision.
(Item 1)
2. Given a situation in which a person would find it useful to plan ahead and a list of activities, be able to identify the activities that would be most and least useful.
(Item 5)

C. Students should recognize that there are different approaches to decision making (planning, impulsive, fatalistic, intuitive, paralytic, agonizing, delaying, compliant) and that an individual may use different approaches in different decision situations.

Sample Tasks

1. Given a set of examples of decision-making behavior, be able to identify the decision-making strategy used in each.
(Items 32, 33, 34)
2. Given a set of decision situations and alternate decision-making strategies, be able to identify the situations for which a particular strategy may be most appropriate.
(Item 46)

D. Students should be able to identify likely actions that might contribute to the solution of specific problem situations.

Sample Task

1. Given a specific decision problem and a set of possible actions, be able to identify the relative usefulness of the various actions toward solution of the given problem.
(Items 21, 28)

E. Students should be able to recognize that making important decisions requires an allocation of time, effort, and resources.

Sample Task

1. Given a situation in which career decision making is described as an effortless, instantaneous process, be able to identify a counterstatement that indicates that important

decisions require time, effort, and resources.
(Item 49)

III. Clarifying values

A. Students should be aware of the role of personal values and preferences in career decision making.

Sample Tasks

1. Given a set of work activity statements and a specific value term with its definition, be able to identify the work activity that is most likely to satisfy the given value.
(Items 22, 23, 24)
2. Given a description of a person in a decision situation who expresses a particular preference and a set of steps in a decision strategy model, be able to identify the step the person has reached.
(Item 13)
3. Given a description of a person with a specific value preference who is exploring a job opportunity and a set of possible interview questions to ask, be able to identify the questions that would be useful to elicit information about the job's potential for satisfying the given value.
(Item 6)

B. Students should recognize that given values (for example, security, helping others) may not be of equal importance to everyone.

Sample Tasks

1. Given a value and its definition and a set of true and false statements about the role the value plays in career decision making, be able to identify the true statement.
(Item 51)
2. Given a description of two people's different responses to a value conflict situation, be able to recognize that career decisions may vary because people differ in the degree of importance they attribute to particular values and goals.
(Item 52)

C. Students should be able to recognize that the solution to many decision problems may require a ranking of values and a compromise of conflicting values.

Sample Task

1. Given a decision situation involving a value conflict, be able to recognize that a solution to the problem may require a compromise of vaues.
(Item 26)

D. Students should be aware that events occur that may cause a person's values and goals to change.

Sample Task

1. Given a question asking for identification of possible causes for a change in a person's values and goals and a set of possible causes, be able to identify the most probable causes.
(Item 39)

IV. Identifying alternatives

A. Students should recognize the desirability of identifying alternate solutions or courses of action in a given decision situation.

Sample Task

1. Given a decision problem and a list of alternate actions, be able to identify the useful actions.
(Items 2, 8, 11, 58)

B. Students should be able to identify and use a variety of resources to develop alternatives.

Sample Tasks

1. Given a decision situation in which a person with a particular job interest is assembling a list of job openings, be able to identify from a set of possible information resources those resources that would be most likely to contain the sought-for information.
(Item 19)
2. Given an example of a high school curriculum listing, be able to select from a list of alternatives an appropriate course selection for a particular individual.
(Item 59)

C. Students should be able to recognize that there may be more than one alternative that will satisfy an individual's values and goals.

Sample Tasks

1. Given a hypothetical conversation in which person A asserts to person B an aspiration to find the "one perfect job" for himself or herself, be able to identify an appropriate response in which person B indicates that there may be a variety of ways to obtain what person A wants out of life.
(Item 10)
2. Given a situation in which person A expresses a career goal and person B suggests exploration of additional alternatives, be able to identify that a person's interests and goals can be satisfied by more than one alternative occupation.
(Item 35)

D. Students should be able to respond constructively to advice from others.

Sample Task

1. Given a situation in which person A exerts pressure to influence person B's career choice, be able to identify appropriate actions that person B can take to respond to person A's pressure constructively.
(Item 18)

V. Discovering probable outcomes

A. Students should know how to acquire, evaluate, and use career-related information.

Sample Tasks

1. Given a situation in which a person is seeking a particular type of information that would assist in reaching a decision and a set of information resources, be able to identify the information resource in which the desired information would be found.
(Item 30)
2. Given a decision situation in which a person has assembled a variety of facts, be able to identify those facts that would be of most use in making the decision.
(Item 31)
3. Given a situation in which a person is seeking information on the probability of being admitted to various colleges and a set of reference resources, be able to identify the resources that would be most likely to contain the desired data.
(Item 36)
4. Given a United States Department of Labor chart or profile presenting supply and demand data or other labor force projections, be able to answer questions that call for accurate interpretation of the data.
(Items 44, 45)
5. Given a chart presenting data on the probability of college admission based on admissions test scores and grade-point averages, be able to answer a question that calls for accurate interpretation of the data.
(Item 54)
6. Given a hypothetical conversation in which person A states to person B an interest in a particular type of work, and a statement of advice in which person B tells person A to avoid that field of work, be able to identify a response in which person A acknowledges a need to seek out more information before deciding.
(Item 55)
7. Given a description of a person in a decision situation who makes a statement involving a need to assess probable outcomes and a set of steps in a decision strategy model, be able to identify the step the person has reached.
(Item 14)
8. Given a situation in which a person is confronting a need to select among several alternatives and a set of actions, be able to identify those actions that would be most useful in making a selection.
(Item 29)
9. Given a statement of an action or decision that presents a mistake in information usage and a list of commonly made types of errors, be able to identify the type of mistake illustrated by the statement.
(Items 15, 16, 17, 47)

B. Students should be able to anticipate probable outcomes and to recognize that there is always some degree of uncertainty about the occurrence of any alternative.

Sample Tasks

1. Given an example of a person contemplating a particular course of action, be able to identify possible long-range consequences of the action.
(Item 48)
2. Given a hypothetical conversation in which person A asserts to person B that a future career-related event is 100 percent certain, be able to identify an appropriate response in which person B indicates knowledge that the probability is less than 100 percent.
(Item 50)

C. Students should be able to infer the probable effects of social and technological change on the occupational structure.

Sample Task

1. Given a situation in which a person has selected a particular occupational goal and statements about anticipated technological developments, be able to identify a statement that best expresses the likely long-range effect of the changing technology on attainment of the occupational goal.
(Item 27)

VI. Eliminating alternatives systematically

A. Students should be able to recognize that a useful procedure for reducing the number of alternatives is to begin by eliminating the least preferable alternatives first and then to concentrate investigative energy on the remaining alternatives until only one is left.

Sample Tasks

1. Given information about four alternate job opportunities and an individual's personal preferences, be able to identify the least desirable alternative and the alternative that would best satisfy the individual's preferences.
(Items 40,41)
2. Given a question about the best way to begin to eliminate alternatives, be able to identify a statement of a procedure that involves eliminating the least desirable alternatives and concentrating investigative energies on the choices still being considered.
(Item 7)
3. Given information about a high school curriculum and four alternative sets of courses that a student might take, be able to identify the most appropriate set of courses.
(Item 60)

B. Students should be able to recognize that one may need to reconsider one's values and goals on the basis of information assembled about anticipated outcomes and the probability of attaining a goal and that any decision is subject to review and change when new opportunities or changing circumstances occur.

Sample Tasks

1. Given a decision situation in which a person's expressed goals and values seem to conflict with information about probable consequences, be able to identify a statement indicating that one option would be a revision in what the person stated as his or her values and goals.
(Item 38)
2. Given a description of a situation in which a person is eliminating alternatives systematically and a new event occurs that alters the basis on which the alternatives are being considered, be able to identify that prior decisions can be changed and that the process can be repeated incorporating the new information.
(Item 42)

C. Students should recognize that, because individuals vary in the amount of risk that they are willing to take, some people in making a decision may not select the most desirable alternative or the one with the highest probability of success.

Sample Task

1. Given a situation in which two individuals with similar goals and choices select different alternatives, be able to recognize that decisions are often infuenced by the amount of risk individuals are willing to take.
(Item 53)

VII. Starting action

A. Students should recognize that appropriate action must be taken if decisions are to be implemented.

Sample Task

1. Given a description of a person who has made a decision, be able to identify appropriate actions that would be logical next steps for the person to take to follow through with the decision.
(Items 43, 56)

B. Students should understand the necessity for accepting responsibility for one's own decisions and for the consequences of those decisions.

Sample Tasks

1. Given a description of a decision situation and a list of individuals associated with the decision, be able to identify the individual responsible for taking action on the decision.
(Item 20)
2. Given a decision situation in which a person is influenced by the advice of others and a list of statements that might be used in assessing that advice, be able to identify the statements that would be most appropriate to consider.
(Item 25)

Specifications for Employment-Seeking Skills

I. Anticipating job prospects

A. Students should be able to identify the need for workers in various fields and the probability of such demand in the future.

Sample Task

1. Given a United States Department of Labor chart or profile presenting supply and demand data or other labor force projections, be able to answer questions that call for accurate interpretation of the data.
(Items 15, 16, 17, 26, 27, 28, 29)

B. Students should be able to recognize the influence of changes in supply and demand in a local labor pool on their bargaining positions.

Sample Tasks

1. Given a fictitious company, a list of job openings, and data on the number of qualified applicants, be able to identify the effect of supply and demand on the probability of obtaining a position.
(Items 21, 22)
2. Given a description of a change in a business or industry, be able to identify, from a set of statements, that statement which best describes the effect of the change on local employment possibilities.
(Items 10, 49, 50)

C. Students should be able to identify the usefulness of knowing prevailing wage rates in negotiating appropriate compensation.

Sample Task

1. Given a situation in which an individual is to be interviewed for a job, be able to identify knowledge of prevailing wage rates as useful information to have in salary negotiations.
(Item 33)

II. Finding and interpreting facts and sources of information about available jobs

A. Students should be able to demonstrate understanding of common vocabulary, terms, and concepts used in describing employment opportunities and conditions.

Sample Task

1. Given a term used in employment contexts and a set of statements presenting possible definition, be able to identify the statement that correctly defines the term.
(Items 48, 64, 70)

B. Students should be able to identify sources of information about occupations and related career planning concerns.

Sample Tasks

1. Given a job title and a list of alternate sources of information for locating and finding out about jobs, be able to identify the most appropriate source for the given job.
(Items 9, 11, 58)
2. Given a need for a specific type of career planning assistance or information, be able to identify the most appropriate source of

such assistance or information.
(Items 35, 59, 60, 61, 62)

C. Students should be able to demonstrate ability to use and interpret a variety of types and sources of job vacancy information and be able to identify the distinguishing features of each.

Sample Tasks

Classified Ads

1. Given an example of a classified ad, be able to interpret the information presented, including terminology, abbreviations, and the specified job requirements.
(Items 1, 2, 3, 4, 30, 31, 51)

State Employment Services

2. Given a list of possible sources from which employment information can be obtained, be able to identify services offered through the State Employment Service (for example, aptitude testing, job referrals, career counseling).
(Item 34)

Private Employment Agencies

3. Given a set of statements, be able to identify correctly those that describe the services or characteristics of a private employment agency.
(Items 63, 68)

U.S. Civil Service Commission

4. Given a set of jobs, be able to identify the job for which a civil service examination would be a requirement.
(Item 19)

5. Given a set of jobs, be able to identify the one for which veterans are likely to be given special consideration.
(Item 23)

III. Identifying appropriately written letters, résumés, and applications for potential employers

A. Students should be able to identify the information that should be included in a letter of inquiry, résumé, and application form.

Sample Tasks

Letters of Inquiry

1. Given a list of possible items of information, be able to identify the information that is appropriate for inclusion in a letter of inquiry.
(Item 5)

2. Given a set of alternate concluding sentences for a letter of inquiry, be able to identify the most appropriate sentence on the basis of style.
(Item 32)

3. Given a list of possible recipients of a letter of inquiry about a job, be able to identify the most appropriate recipient.
(Item 37)

Résumés

4. Given a list of information items, be able to identify those items that are most appropriate for inclusion in a résumé.
(Items 24, 25, 66, 67)

5. Given an example of a poorly arranged résumé, be able to identify a more appropriate arrangement of the information.
(Item 65)

Application Forms

6. Given a sample application form, be able to identify the most appropriate information to supply and correct interpretations of the material presented.
(Items 54, 55, 56, 57)

7. Given a list of items of information, be able to identify those that are likely to be requested on a job application form.
(Items 12, 13)

8. Given a list of statements describing appropriate and inappropriate application procedures, be able to identify a statement of appropriate procedures.
(Items 18, 38)

9. Given a list of possible employer procedures in considering job applications, be able to identify those that are common practice.
(Item 36)

10. Given a description of a person who has left a job because the work was not interesting, be able to identify the most appropriate way to state that fact on an application for a new job.
(Item 8)

IV. Describing appropriate appearance and behavior as one is interviewed and evaluated for a job

A. Students should be able to demonstrate a knowledge of useful information and appropriate behavior for an employment interview.

Sample Tasks

1. Given a set of statements about a person's behavior in an interview situation, be able to identify the statement that describes inappropriate behavior.
(Item 42)

2. Given a set of statements of information that might be useful to know before going to a job interview, be able to identify the information that would be least important to know.
(Item 52)

3. Given a situation in which a person is offered a job opportunity that does not fit his or her interest, be able to identify an appropriate response.
(Item 14)

4. Given a set of appropriate and inappropriate questions that an applicant might ask in a job interview, be able to identify those questions that are most appropriate.
(Items 6, 7)

5. Given a set of questions that an employer might ask a job applicant, be able to identify

those that are considered discriminatory.
(Items 40, 41)

B. Students should be able to demonstrate awareness of common personnel practices, including the possibility of testing.

Sample Tasks

1. Given a specific job and a set of possible tests, be able to identify the test that would be most likely to be given to applicants for that job.
(Item 53)
2. Given a set of possible test preparation practices, some of which would be useful and some of which would not, be able to identify those practices that would be useful.
(Item 69)

V. Evaluating a specific job in relation to a person's needs and interests

A. Students should be able to evaluate a position in terms of the opportunity it offers for satisfying their personal preferences.

Sample Task

1. Given an example of a person with certain work preferences and two job alternatives, be able to identify which job would satisfy which preferences.
(Items 43, 44, 45, 46, 47)

B. Students should be able to evaluate employment opportunities in terms of their personal preferences (interests, values, and goals).

Sample Tasks

1. Given a description of a person's long-range goals and a set of job alternatives, be able to identify the job with the greatest potential for facilitating achievement of the goal.
(Item 20)
2. Given a set of factors that a person might consider in evaluating a set of jobs, be able to identify the most important factor.
(Item 39)

Specifications for Work Effectiveness Skills

I. Identifying the responsibilities of employers and employees to each other

A. Students should be able to demonstrate an understanding that an organization's rules and regulations are designed to aid in carrying out established work policies and procedures, and an understanding that it may be necessary to question and attempt to change those rules if they are found to be unfair or unreasonable.

Sample Tasks

1. Given an excerpt from a company's personnel policies manual and an example of a personnel problem, be able to identify the purpose of the policy.
(Item 15)
2. Given an example of a worker who expects to be absent from work, be able to recognize that the worker should promptly tell his or her supervisor about the expected absence.
(Item 8)
3. Given a description of several personnel practices, be able to identify those that are unfair or represent a violation of employee rights.
(Item 18)
4. Given a description of a situation in which a worker charges that an employer is not carrying out stated policies, be able to identify a constructive action the employer can take to improve the situation.
(Item 48)
5. Given a description of a clerk confronted by an irate customer in the complaint department of a large store with established policies governing refunds and exchanges, be able to identify an appropriate action for the clerk to take in dealing with the customer.
(Item 46)

B. Students should be able to demonstrate an understanding of the substance and purpose of laws concerning working conditions.

Sample Task

1. Given a statement of an antidiscrimination law, be able to identify a company policy that illustrates a violation of that law.
(Item 24)

C. Students should be able to demonstrate an understanding of the need to avoid damaging property of others and to exercise care for their own and others' safety.

Sample Tasks

1. Given an example of on-the-job pilferage or theft, be able to identify a statement that best explains the impact of such actions on the company.
(Item 31)
2. Given an example of an employee who disregards reasonable rules or policies of a company, be able to identify the likely consequences of such behavior.
(Item 51)
3. Given an example of a work situation in which an employee's carelessness results in broken tools or equipment, be able to identify a statement in which the employee acknowledges responsibility for his or her actions.
(Item 1)

II. Developing effective work habits

A. Students should be able to demonstrate understanding of effective work habits that are essential to satisfactory job performance.

Sample Tasks

1. Given an example of an employee who wants to do well on a job, be able to identify work habits and practices that would enhance the employee's job performance.
(Item 4)

2. Given a description of a work situation in which a worker has been experiencing difficulty in carrying out complex instructions or assignments, be able to identify a useful action the worker could take to improve his or her future job performance.
(Item 11)

3. Given a description of a work situation in which a worker is given complex instructions under hurried conditions, be able to identify the best action for the worker to take in response to the situation.
(Item 57)

4. Given a description of a situation in which a worker has difficulty getting tasks done on time, be able to identify useful actions that might be employed in planning tasks so that the worker's time is used efficiently and work gets done on time.
(Item 40)

5. Given a situation in which a worker has received a performance review that noted lack of initiative, be able to identify useful actions the worker might employ to improve future performance.
(Item 19)

B. Students should be able to demonstrate an understanding that such personal characteristics as accuracy, conscientiousness, thoroughness in completing one's work, honesty, and fairness are related to effective job performance.

Sample Task

1. Given a situation in which a worker is relied upon to complete a task, be able to identify the impact that failure to complete the work will have on co-workers and supervisors.
(Item 45)

C. Students should be able to identify and apply useful strategies for solving on-the-job problems.

Sample Tasks

1. Given a description of a problem that an employee is having in completing a work activity or in carrying out a job function, be able to identify the most appropriate action to take to solve the problem.
(Items 20, 26)

2. Given a description of a situation in which one worker asks another to intercede with a supervisor, be able to identify the most appropriate action for the worker to take in response to the co-worker's request.
(Item 52)

III. Achieving effective working relationships with co-workers

A. Students should be able to demonstrate an understanding of the importance of effective working relationships with co-workers and of behavior that would be useful in developing satisfactory relationships.

Sample Tasks

1. Given a situation in which a skilled worker is fired because of poor interpersonal relationships with co-workers, be able to identify a conclusion that skills in getting along with people are also important to job success.
(Items 22, 35)

2. Given a situation in which rivalry exists between co-workers, be able to identify useful actions to take to deal constructively with the competition or to eliminate it.
(Items 9, 53)

B. Students should be able to demonstrate an understanding of behavior that would be useful in resolving conflicts that result from different personal needs and values among workers.

Sample Tasks

1. Given a description of a work situation in which one worker notices mistakes in the work of another, be able to identify appropriate action for the first worker to take.
(Item 50)

2. Given a description of a work situation in which one worker is annoyed with a co-worker's poor work performance and is considering complaining to the supervisor, be able to identify the likely consequences of this action.
(Item 34)

C. Students should be able to demonstrate understanding of when and how to give and receive constructive criticism.

Sample Tasks

1. Given a situation in which one worker asks another for comments about his or her work performance, be able to identify statements that the second worker might make that would be useful in helping the first worker to improve.
(Items 16, 47)

2. Given a description of a work situation in which an experienced worker offers suggestions to an inexperienced co-worker about ways in which the co-worker's work performance might be improved, be able to identify the most effective action for the co-worker to take in response to the advice.
(Item 5)

D. Students should be able to demonstrate an understanding of procedures, mechanisms, and strategies for dealing with emergencies, nonroutine job situations, and other on-the-job problems.

Sample Task

1. Given an example of an on-the-job accident in which a worker is injured in the presence of a co-worker, be able to identify appropriate action for the co-worker to take in the situation.
(Item 55)

IV. Managing work situations to achieve personal satisfaction

A. Students should be able to demonstrate an understanding that personal values sometimes conflict with job requirements and an understanding of procedures and strategies for resolving such conflicts.

Sample Tasks

1. Given an example of an employee in a work situation in which a worker is ambivalent about sacrificing personal relationships and free time when overtime or travel is required for job performance, be able to identify a conclusion that personal value conflicts are often associated with certain occupations.
(Items 14, 44)
2. Given an example of a person who has been bypassed for promotion because of his or her life-style preferences, be able to identify from a list of statements the statement that presents the most plausible explanation of the relationship between external expectations and successful performance of given occupations.
(Item 38)
3. Given a description of a work situation in which criticism by a supervisor of a worker's personal values or habits is necessary, be able to identify an effective action the supervisor might take to encourage the worker to change.
(Item 17)
4. Given a situation in which an employee experiences conflict between personal values and the employer's expectations in regard to appropriate work attire, be able to identify potentially useful actions for the employee to take to resolve the conflict.
(Item 58)
5. Given a problem situation in which a worker experiences a conflict between job demands and personal values or commitments, be able to identify an action that recognizes that the worker might be able to negotiate suitable working conditions with an employer.
(Items 2, 6, 39)

B. Students should be able to demonstrate understanding of useful coping strategies and techniques for analyzing and managing stress in work situations.

Sample Tasks

1. Given a situation in which a worker is continually worried about losing his or her job, be able to identify useful actions the worker might take to determine whether or not this concern is valid.
(Item 60)
2. Given a situation in which a worker is continually anxious about having co-workers like or respect him or her, be able to identify useful actions the worker could take to reduce that anxiety.
(Items 21, 41)

V. Giving and receiving supervision effectively

A. Students should be able to identify and apply effective interpersonal skills in giving and receiving supervision.

Sample Tasks

1. Given a description of a work situation in which a supervisor has to criticize an employee, be able to identify the best ways to present the problem to the employee in order to lessen the chances of the employee's becoming defensive.
(Items 27, 37)
2. Given a description of a work situation in which a work team has made an error, be able to identify the most useful action for the supervisor of the work team to take first.
(Item 56)
3. Given an example of an employee faced with unreasonable or inappropriate demands by a supervisor, be able to identify actions that will help the employee to defend his or her own rights or change the situation.
(Items 42, 54)
4. Given an example of an employee faced with a demand made by a supervisor, be able to identify an appropriate response by which the employee might encourage the supervisor to accept the point of view that reason rather than authority be the basis of work assignments.
(Item 49)
5. Given a situation in which a worker is continually tense in the presence of a supervisor, be able to identify useful actions that the worker could take that would help to improve communication and to reduce the tension.
(Items 10, 30)
6. Given a situation in which a supervisor has to communicate new orders to his or her staff, be able to identify the most effective means of communication.
(Item 7)

VI. Advancing on the job

A. Students should be able to identify factors associated with advancement in a given occupational area, as well as factors that may result in inefficiency, decreased productivity, demotion, or loss of job.

Sample Tasks

1. Given a description of a worker who refuses an offer of a promotion in order to remain in his or her present position, be able to identify from a list the most appropriate inference that can be made about the probability that the worker will receive similar offers of promotion in the future.
(Item 36)

2. Given a description of the work activities and performance of a worker who recently received a promotion, be able to identify from a set of possible reasons the most likely reason why the worker was promoted.
(Item 3)

3. Given a description of a situation in which a worker has been criticized for poor work and threatened with loss of job, be able to identify from a set of possible reasons the most likely action or behavior that led to the current situation.
(Item 33)

4. Given a situation in which a skilled employee has been bypassed for promotion because of negative attitudes, be able to identify a statement that provides the most plausible explanation.
(Items 23, 43)

B. Students should be able to demonstrate understanding of common requirements for advancing within an occupation or securing new employment and should be able to identify strategies to meet these requirements.

Sample Task

1. Given an example of an employee who wants to advance on a job, be able to identify actions that would increase the likelihood of the employee's obtaining a promotion.
(Item 29)

VII. Planning job changes

A. Students should be able to demonstrate awareness of conditions in specific work situations that would warrant consideration of changing jobs.

Sample Tasks

1. Given a situation in which a worker has little job security, be able to recognize that this condition may be a sufficient reason to look for another job.
(Items 12, 28)

2. Given a situation in which a worker who prefers working as a team member is promoted to a supervisory position, be able to identify a reason why the promotion may lead to dissatisfaction for the person being promoted.
(Item 32)

B. Students should be able to demonstrate understanding of factors to consider in changing occupations or employers.

Sample Tasks

1. Given a situation in which a person's occupational interests have changed, be able to recognize that an expenditure of time, effort, and resources may be necessary to make a transition from one occupational field to another.
(Item 25)

2. Given a situation in which an individual is considering a job change because the present job is no longer challenging, be able to identify factors the individual should consider before making the change.
(Item 59)

3. Given an example of a person who is considering a job change and a list of activities that the person might undertake to find out about a new job, be able to identify those activities that would be of most use to the person in determining how satisfying the new job might be.
(Item 13)

Specifications for Personal Economics Skills

I. Figuring your paycheck and income tax

A. Students should be able to identify and apply basic wage, salary, and benefits concepts and procedures in determining net pay and understanding fringe benefits.

Sample Tasks

1. Given a statement of earnings and deductions of the type customarily attached to a paycheck, be able to answer questions that call for understanding or interpretation of the information presented.
(Items 27, 28)

2. Given the hourly pay rate, overtime pay rate, typical number of hours worked per week, and actual number of hours worked including overtime for an individual, be able to compute the person's total earnings for that week.
(Item 31)

3. Given gross income and expense figures for one month for a self-employed individual who operates a small business, be able to compute the person's net income for that month.
(Item 26)

4. Given information about an individual whose income is based on both salary and commission, be able to indicate which arithmetic operations should be used to determine the individual's earnings for a particular month.
(Item 17)

B. Students should be able to identify and apply principles of taxation and tax report preparation.

Sample Tasks

1. Given a description of a situation in which a person has not claimed an exemption for himself or herself on a W-4 form for withholding federal income tax, be able to identify the effect on the individual's take-home pay if he or she changes his or her response on the form and claims a personal exemption.
(Item 46)

2. Given a description of a student whose annual part-time job income was below the

minimum level required to pay federal income tax but whose employer withheld such taxes, be able to identify the appropriate procedure to arrange for return of the withheld taxes.

(Item 2)

3. Given a description of a person whose earnings include tip income from which no income tax was withheld, be able to identify the person's tax liability on such earnings.

(Item 24)

4. Given a list of different types of income, be able to identify the types of income that must be reported on a taxpayer's federal income tax return.

(Item 56)

5. Given information about a specific individual's tax status and adjusted gross income and a sample federal income tax table, be able to identify the amount of tax due on the individual's earnings.

(Item 35)

II. Understanding personal banking procedures

A. Students should be able to identify and apply concepts of personal banking, including checking and savings account procedures.

Sample Tasks

1. Given a description of a person who needs a particular banking service for depositing paychecks and paying bills and a list of different banking services, be able to identify "checking account" as the needed service.

(Item 1)

2. Given a blank personal check and a list of possible items of information that might be used in filling it out, be able to identify the information that should be placed on certain specified lines.

(Items 6, 7)

3. Given a description of a situation in which a personal check made out in payment of a bill was stolen or lost before being deposited by the payee, be able to identify the "stop payment" procedure as the appropriate first step to take.

(Item 25)

4. Given information about personal checking accounts available through four different banks and the comparative cost features of each, be able to identify the account that would be least expensive for an individual who writes checks with a specified frequency.

(Item 44)

5. Given information about a personal savings account in which the balance remains stable and the annual interest rate is compounded quarterly, be able to compute the dollar amount of interest accrued at the end of three months.

(Item 51)

III. Purchasing goods and services and paying bills

A. Students should be able to identify and apply basic consumer economic principles in the purchase of goods and services.

Sample Tasks

1. Given information about the prices and weights of three comparable brands of a specific food item, be able to use the concept of unit price to identify the least expensive brand.

(Item 52)

2. Given an example of a warranty on a particular product, be able to interpret the information contained in it to identify the liability of the manufacturer and the action the purchaser should take if the product is broken or defective.

(Items 33, 34)

3. Given a description of a situation in which a product may be purchased at substantial discount from a store that is going out of business, be able to identify a possible disadvantage of such a purchase.

(Item 23)

4. Given a description of a situation in which an individual has made a deposit or down payment on a purchase from a door-to-door salesperson and then changes his or her mind, be able to identify the individual's legal rights regarding return of the deposit.

(Item 38)

5. Given a situation in which a person is contemplating purchase of an automobile and information about its price and the sales tax rate for that area, be able to compute the true cost of the automobile.

(Item 42)

B. Students should be able to identify and apply procedures and conventions associated with the payment of bills.

Sample Tasks

1. Given an example of a typical telephone bill, be able to answer questions calling for interpretation of the itemized charges and identification of procedures to follow in the event of a billing error.

(Items 13, 14)

2. Given a description of a situation in which an individual loses a monthly charge account bill, be able to identify an appropriate procedure to follow to avoid the payment of interest charges on the unpaid balance.

(Item 3)

IV. Insuring yourself and your possessions

A. Students should be able to identify and apply basic insurance concepts and principles in the selection of insurance plans.

Sample Tasks

1. Given a description of a situation in which an insurance company representative is at-

tempting to sell a life insurance plan to an individual, be able to recognize the desirability of delaying the purchase in order to compare alternate plans and premium rates from other companies.

(Item 10)

2. Given a description of a specific optional benefit that might be added as a provision in a life insurance policy, be able to identify the insurance term used to describe the optional benefit.

(Item 15)

3. Given a description of a worker who was injured in his or her place of employment, be able to identify the benefits available through workers' compensation.

(Items 19, 32)

4. Given a brief description of group insurance, be able to identify an advantage of that type of insurance.

(Item 59)

5. Given a description of a person who is arranging for insurance on a newly purchased automobile, be able to answer questions that call for understanding the specific benefits of collision insurance and the effects of deductible clauses.

(Items 57, 58)

B. Students should be able to demonstrate understanding of benefits provided under social security.

Sample Tasks

1. Given an excerpt from a social security benefits table and a description of a situation in which a worker becomes disabled, be able to identify the specific benefits for which the worker would be eligible.

(Item 40)

2. Given a description of a situation in which the family breadwinner dies and an excerpted statement of benefits from a social security publication that indicates the financial support an adolescent beneficiary could receive to complete his or her college education, be able to identify the correct interpretation of the statement.

(Item 53)

V. Borrowing and using credit

A. Students should be able to identify and apply the procedures and conventions associated with loans, credit, and installment buying.

Sample Tasks

1. Given a description of a situation in which a person is contemplating purchase of an automobile and an advertisement presents installment and cash purchase information, be able to compute the difference in cost between the two methods of purchase.

(Item 47)

2. Given the terms for purchasing a product on either a cash or installment basis, be able to identify which arithmetic operations should be used to determine the difference in cost between the two purchase arrangements.

(Item 16)

3. Given an example of a standard credit card or charge account bill, be able to answer questions that call for accurate interpretation of the information presented (for example, the amount required to make payment in full, the minimum installment payment permitted).

(Items 49, 50)

4. Given a description of a situation in which a person lost several credit cards, be able to identify the appropriate action that the owner of the cards should take immediately.

(Item 54)

5. Given an example of an installment purchase agreement for a major purchase, be able to identify the total cost of the product if purchased on an installment basis and the amount of the finance charge.

(Items 20, 21)

6. Given a situation in which an individual or a family experiences a problem (for example, layoff, disability) that results in inability to make monthly payments on an installment purchase, be able to identify the most appropriate action to take as a first step.

(Item 5)

7. Given a situation in which an individual or a family is experiencing financial management problems, be able to identify community agencies or resources that offer financial counseling services.

(Item 4)

8. Given a description of a situation in which a sales representative is offering dealer financing to a person who is purchasing a used car, be able to identify the most likely reason for the offer.

(Item 11)

VI. Understanding investment procedures

A. Students should be able to identify and apply concepts and procedures associated with investments, including the functions of the stock market.

Sample Tasks

1. Given an excerpt from a newspaper stock market activity report, be able to answer specific questions that require interpretation of the report (for example, the highest price that a particular stock sold for on the day reported).

(Item 22)

2. Given a list of true and untrue statements about features of different securities, be able to identify the true statements.

(Item 43)

3. Given a table that lists several companies and information on their profitability and

growth records, be able to identify the company that has demonstrated the best performance on specific factors such as growth in sales and earnings.

(Item 30)

4. Given a situation in which two companies' stocks sell for different amounts per share, be able to identify a statement that best explains the reason for the difference.

(Item 48)

5. Given a brief description of a mutual fund, be able to identify an advantage of mutual funds.

(Item 60)

6. Given a description of a specific company and a list of investors with different investment goals or characteristics, be able to identify the type of investor for whom stock in the described company would be most appropriate.

(Item 18)

7. Given a description of a highly profitable, publicly held company, be able to identify possible ways in which the company would use its profits (for example, dividend distribution, capital investment).

(Item 8)

VII. Understanding basic economic ideas

A. Students should be able to identify and apply basic economic principles and concepts.

Sample Tasks

1. Given a situation in which basic economic principles are illustrated and a list of terms describing economic concepts, be able to identify the terms that apply to the described situation.

(Item 12)

2. Given a situation in which the concept of supply and demand is illustrated, be able to identify a statement that most accurately describes a consequence of the situation.

(Items 29, 37)

3. Given a situation in which worker specialization is described and a list of possible consequences, be able to identify negative consequences that may result from specialization.

(Item 39)

4. Given a set of examples of payments made by one individual or group to another, be able to identify those transactions that illustrate income payments made in exchange for time spent in producing goods or services desired by others.

(Item 41)

5. Given a description of a situation in which demand for a consumer product exceeds supply with resultant price increases, be able to identify consumer action that would result in lower prices.

(Item 45)

6. Given a situation in which the concept of division of labor is described, be able to identify a statement that most accurately describes a consequence of division of labor.

(Item 55)

7. Given a definition of profit and a situation in which the concept can be applied, be able to identify an action that will result in increased profits.

(Item 36)

8. Given a description of a situation in which monopolistic practices result in government intervention, be able to identify a statement that best explains the reasons for such intervention.

(Item 9)

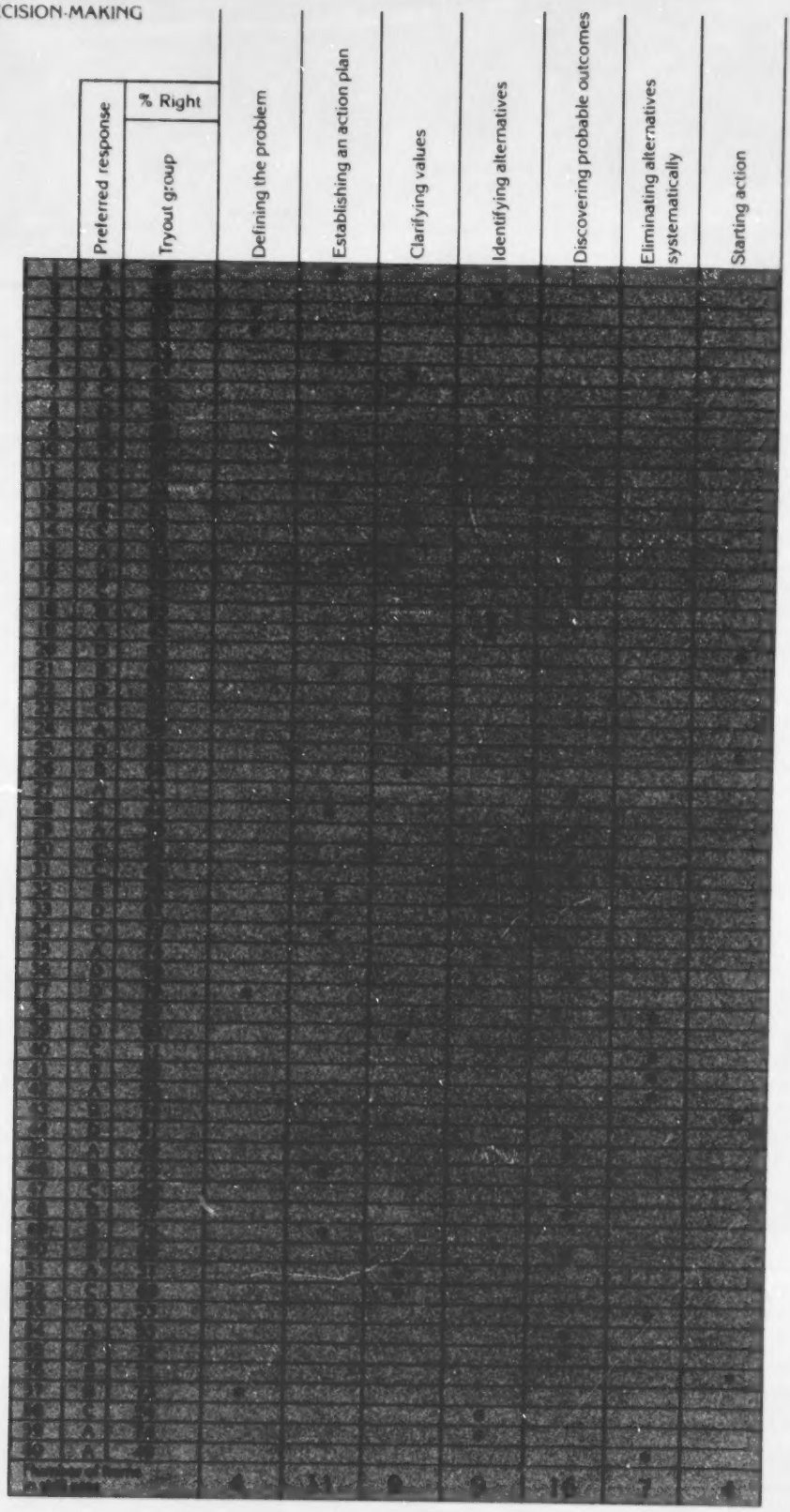
Item Classification Tables

SELF-EVALUATION
DEVELOPMENT SKILLS

	Preferred response	% Right	Understanding individual differences	Evaluating individual characteristics and understanding test results	Changing personal characteristics and understanding test results	Locating and interpreting information about self	Applying knowledge about self to career opportunities
		Tryout group					

CAREER AWARENESS
SKILLS

CAREER DECISION-MAKING SKILLS



EMPLOYMENT-SEEKING SKILLS

Preferred response	% Right		
	Tryout group		Anticipating job prospects
			Finding and interpreting facts and sources of information about available jobs
			Identifying appropriately written letters, résumés, and applications for potential employers
			Describing appropriate appearance and behavior as one is interviewed and evaluated for a job
			Evaluating when a specific job fits a person's needs and interests

WORK EFFECTIVENESS SKILLS
Preferred response
% Right
Tryout group
Identifying the responsibilities of employers and employees to each other
Developing effective work habits
Achieving effective working relationships with co-workers
Managing work situations to achieve personal satisfaction
Giving and receiving supervision effectively
Advancing on the job
Planning job changes
10
11
9
6
6

77

PERSONAL ECONOMICS SKILLS

	Preferred response	% Right	
		Tryout group	
Figuring your paycheck and income tax			
Understanding personal banking procedures			
Purchasing goods and services and paying bills			
Insuring yourself and your possessions			
Borrowing and using credit			
Understanding investment procedures			
Understanding basic economic ideas			

Appendix B: Selected Bibliography of Skill-Building Resources

Educators responsible for student career development have a demanding and complex task. They are responsible not only for identifying students' current developmental status but for arranging appropriate instructional and guidance experiences to facilitate continued development.

The bibliographic discussion that follows provides information about an array of published materials that may be of use in programs designed to strengthen the career skills covered in the six content areas of the CSAP. The materials included were identified by project staff, in the course of developing the program, as some of the most useful available. However, the bibliography is not exhaustive. It should be viewed as a beginning point for educators who are seeking relevant resource materials. Further suggestions will be found in the bibliographies contained in several of the books mentioned here and in the collections of instructional materials maintained by many colleges, state departments of education, and regional education agencies.

The bibliography is divided into seven sections: the first section includes general works about career development and materials that apply to more than one of the six content areas of the CSAP; the remaining six sections coincide with the six content areas.

Within each section, the entries are grouped by topics, roughly the same as the topics of the individual skill areas but sometimes combining two or more topics. References described in the guides are included in this bibliography.

Prices given are list prices. Information about discounts for educators or for multiple orders can be obtained from the publishers. A list of the publishers and other sources of references mentioned in the bibliography and their addresses follows the bibliography.

Please notify us if you have corrections for this bibliography or comments on it, or if you wish to suggest new entries for future editions. A suggested format for sending such information appears on page 78.

Note that ACE and SRA, used throughout the bibliography, are abbreviations for American Council on Education and Science Research Associates respectively.

General

This section covers some bibliographic collections, some books for general background reading on teaching or counseling students in career education, some curriculum guides and collections of classroom lesson plans, and a few materials that belong to several or all CSAP areas.

Bibliographies

Key Resources in Career Education: an Annotated Guide by David V. Tiedeman and others (National Institute of Education, 1976, $5.75) is an annotated bibliography of sources in the field of career education. In addition to the usual subject, title, and author information, each entry includes statements of the purpose, the content, and the intended audience of the work, and sometimes an evaluative comment.

An Introduction to Career Education by John B. Stevenson (Charles A. Jones Publishing Company, 1973, $10.95) is a useful reference, especially at the program planning stage. Its nine chapters include a history of the career education movement, definitions of career education, and information on providing developmental focus, coordinating guidance and counseling activities, and implementing career education.

Career Education Sourcebook by Judith E. Hedstrom and Mary Jane Turner is an analysis of 47 career education materials. There are two companion volumes: **Tips for Infusing Career Education in the Curriculum** by Bob Taylor and others suggests ways of introducing career education into various subject areas; **Career Education Materials Analysis Instrument** by Judith E. Hedstrom and Constance M. Williams provides systematic methods for rating materials. (Social Science Education Consortium, 1977, $11 per set of three books.) These three books are also listed in **Resources in Education** and are available in microfiche or hard copy from the ERIC Document Reproduction Service, documents SO 010 180, SO 010 154, and SO 010 155, respectively.

Background Reading

A series of over 20 **Monographs on Career Education** (U.S. Department of Health, Education, and Welfare, Office of Education, 1976; individual monographs under $1 each, minimum order $1 from the Superintendent of Documents) cover a broad range of topics.

Vocational Guidance and Career Development in the Schools: Toward a Systems Approach by Edwin L. Herr and Stanley H. Cramer (Houghton Mifflin, 1972, $13.95) and **Vocational Guidance and Human Development** edited by Edwin L. Herr (Houghton Mifflin, 1974, $13.95) are broader than the word "vocational" implies. Both provide excellent background reading for teachers involved in any aspect of career education, including guidance for further education.

Occupational Information: Where to Get It and How to Use It in Counseling and in Teaching, 4th edition, by Robert Hoppock (McGraw-Hill, 1976, $14.50) is thorough; it ranges from discussions of

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theories of vocational choice and development to practical considerations such as where to get materials, how to organize a resource collection for students, and how to conduct interviews. It contains information for teachers and counselors at any level.

Career Information in Counseling and Teaching, 3rd edition, by Lee E. Isaacson (Allyn and Bacon, 1977, $13.95) includes information for short-term advising of both college-bound students and those headed directly into the work force. It also includes discussions of economic trends and other issues that influence long-term career planning.

Curriculum Guides and Lesson Outlines

Northwest Regional Educational Laboratory has published five handbooks that outline a complete program of experience-based career education for high school students ($120 per set). **Management & Organization** treats overall operational considerations for an experience-based career education program; **Curriculum & Instruction** covers the content and processes of student learning and the resources such a program makes available to students; **Employer/Community Resources** tells how to establish and maintain a network of sites at which students work; **Student Services** deals with procedures for admitting students, keeping records, and awarding credentials; and **Program Evaluation** establishes procedures for assessing the program. Based on a pilot program in Tigard, Oregon, these thorough handbooks are practical, not theoretical.

Experience-Based Learning: How to Make the Community Your Classroom by Larry McClure, Sue Carol Cook, and Virginia Thompson (Northwest Regional Educational Laboratory, 1977, $8.95) is a distillation of the above five detailed volumes. Supplementary short pamphlets available for students and community resource people are: **Student Record of Community Exploration** $1; **Student's Guide to Writing a Journal** $1; **Student Competencies Guide: Survival Skills for a Changing World** $1.75; and **The Community Resource Person's Guide for Experience-Based Learning** $1.75.

Career Education Program, Volume II, Grades 7-9, by Glenn A. Saltzman, and Volume III, Grades 10-12, by H. Eugene Wysong (Houghton Mifflin, 1973, $28 each) contain lesson outlines for a series of units in career education. Each lesson outline includes objectives, preparation, procedures, materials, guidelines, and suggestions for follow-up activities. Each volume also contains a set of preprinted duplicating masters.

Career Education Activities for Subject Area Teachers Grades 9 through 12 (Abt Publications, 1975, $10) is a manual of activities in career education suitable for teachers of such subjects as social studies, art, health, English, driver education, and so on. For each activity, the following information is given: occupational focus, relevance to the subject area, teaching prerequisites (time, materials, and preparation needed), objectives, useful before and after activities, and resources. A final section discusses a dozen different methods that are useful for teaching career education.

Career Education Resource Guide (General Learning Corporation, 1972, $7.65) is an excellent single-volume collection of activities and plans for classroom instruction. A brief introductory overview puts them in context.

Materials That Span Several or All CSAP Areas

Many materials discussed in subsequent sections of the bibliography apply to more than one section. Each of the following references relates to almost all the CSAP areas.

Of the many textbooks available, two cover almost the same topics as CSAP and are similar in underlying philosophy:

1. **Succeeding in the World of Work** by Grady Kimbrell and Ben S. Vineyard (McKnight, 1975, $11.44). Accompanying volumes are **Activities for Succeeding in the World of Work,** a teacher's guide to the activities book, and **Individualized Related Instruction for Entering the World of Work** ($3).

2. **Exploring Career Decision-Making** by Appalachia Educational Laboratory, Inc., David W. Winefordner, Director (McKnight, 1978, $9.40) and the accompanying pamphlet **Activities for Exploring Career Decision-Making.** The teacher's edition has activities, suggestions for discussions, and statements of concepts printed in the extra-wide margins next to the text of the student's version.

Several series published by Follett are especially good for slow learners or poor readers. **The Coping Skills Series, Accent/World of Work, Accent/Personality, The Turner-Livingston Reading Series,** and **The Turner Career Guidance Series** span CSAP topics from self-assessment to family finances.

Scope Visuals 13: Getting Applications Right by Jeri Schapiro (Scholastic, 1973, $6.95) includes transparencies and spirit masters of many different kinds of application forms—for work, for social security, for credit. They were assembled especially for use with high school students reading at fourth-to-sixth-grade level, but any student who has never completed application forms of these types could benefit from going through this exercise.

Working by Studs Terkel (Avon Books, 1975, $2.25) doesn't really fit into any of the categories previously covered, but it tells so much about attitudes toward work and the meaning of work in the United States that it could be useful in almost any phase of career exploration.

Self-Evaluation and Development

Self-evaluation, self-understanding, self-assessment, assessing personal strengths and weaknesses, clarifying values—all are variations of the same theme. References for this theme appear under the topics of career planning and values clarification in the Career Decision Making section of this bibliography. One further reference, covering both values clarification and behavior change, is **Taking Charge of Your Life** by Leland Howe (Argus Communications, 1977, $2.95). It consists of many low-keyed exercises that pose questions and include things to do toward learning self-awareness and self-management.

Many psychology textbooks are available for both high school and college. **Here's Psychology** by David Watson (Ginn, 1977, $10.95) presents an introduction to the topic of human psychology that is consistent with the philosophy of self-management materials.

Applied Psychology: Adjustments in Living and Work by B. von Haller Gilmer (McGraw-Hill, 1975, $12.95) is a text for first- or second-year college students that focuses on applying established principles of psychology to common problems of normal adjustment.

For materials helpful for understanding test results, refer to the publications that usually accompany test scores, such as **Your Score Report** from the College Board's Admissions Testing Program, **What Your Scores Mean** from the College Board's College-Level Examination Program, or the College Board's **Guide to the Admissions Testing Program.** Further references on this subject are cited in Sections III and IV of this handbook.

Self-Change

Many recent books discuss the process of self-change. **How to Get Rid of Emotions That Give You a Pain in the Neck** by Merrill Harmin (Argus Communications, 1976, $1.95) has lots of good suggestions for helping people to change the feelings that bother them.

Help Yourself by John Lembo (Argus Communications, 1974, $2.50) describes a logical approach to self-change.

For an introduction to the principles of self-management, see **Help Yourself: A Guide to Self-Change** by Jerry A. Schmidt (Research Press, 1976, $3.95).

For a somewhat more difficult but also more thorough discussion with much greater detail, see **Self-Directed Behavior: Self-Modification and Personal Adjustment** by David L. Watson and Roland G. Tharp (Brooks/Cole, 1977, $7.95).

How to Help Yourself: The Art of Program Development by Robert R. Carkhuff (Human Resource Development Press, 1974, $5.95) presents a slightly different way of approaching a behavior change plan.

Two books by leaders in the field of behavior change are **A New Guide to Rational Living** by Albert Ellis and Robert A. Harper (Wilshire, 1977, $3), and **I Can If I Want To** by Arnold Lazarus and Allen Fay (William Morrow, 1975, $5.95).

Two that suggest ways in which being aware of oneself and understanding one's feelings can contribute to self-confidence and personal growth are **If You Really Knew Me Would You Still Like Me?** by Eugene Kennedy (Argus Communications, 1975, $2.25), and **Why Am I Afraid to Tell You Who I Am?** by John Powell (Argus Communications, 1969, $2.25).

Numerous recent books deal specifically with particular areas of change, such as becoming more assertive, studying more effectively, losing weight, or stopping smoking. All the following books have specific suggestions for improving skills.

Asserting Yourself: A Practical Guide for Positive Change by Sharon Anthony Bower and Gordon H. Bower (Addison-Wesley, 1976, $4.95).

Your Perfect Right by Robert E. Alberti and Michael L. Emmons (Impact Publishers, 1976, $2.50) is one of the earliest of the assertiveness-training books.

How to Study in College by Walter Pauk (Houghton Mifflin, 1974, $4.95) is the most advanced of the study books listed here. Also for college students is **How to Study** by Clifford T. Morgan and James Deese (McGraw-Hill, 1969, $3.95).

These three are good for high school students: **How to Study** by Lester and Alice Crow (Collier Books, 1963, $1.25); **How to Study in High School** by Lois Lynn Hardy (Pacific Books, Publishers, 1973, $1.95); and **How to Take Tests** by Jason Millman and Walter Pauk (McGraw-Hill, 1969, $2.95).

Learn How to Study by Bernard G. Kelner (SRA, 1977, $3.20) is the most elementary of the study books listed here.

Study Tips: How to Study Effectively and Get Better Grades by William H. Armstrong (Barron's, 1975, $2.25).

Locating and Interpreting Information about Self

Adventures in the Looking-Glass: Experiencing Communication with Your Self and Others by Sharon A. Ratliffe and Deldee M. Herman (National Textbook Company, 1974, $7.95) approaches the process of acquiring self-knowledge by providing many activities to be done in a group under the leadership of a teacher or counselor.

Many recent books are directed toward helping people to understand what goes on in one-to-one relationships and to develop effective interpersonal skills. All the following provide information, questions, and exercises.

Inter-Act: Using Interpersonal Communication Skills by Kathleen S. Verderber and Rudolph E. Verderber (Wadsworth Publishing Company, 1977, $6.95), and **Reaching Out: Interpersonal Effectiveness and Self-Actualization** by David W. Johnson (Prentice-Hall, 1972, $9.95) are aimed at high school students.

Person to Person by Kathleen Galvin and Cassandra Book (National Textbook Company, 1973, $7.95) focuses on interpersonal communication but also includes communicating in groups. A teacher's guide is available.

You and Others: An Introduction to Interpersonal Communication by Donald L. MacRae and others (McGraw-Hill Ryerson, 1975, $7.95), **Together: Communicating Interpersonally** by John Stewart and Gary D'Angelo (Addison-Wesley, 1975, $8.95), and **Between People: A New Analysis of Interpersonal Communication** by Gerald R. Miller and Mark Steinberg (SRA, 1975, $9.95) are intended for college students. A separate study-activity guide is available.

The Process of Group Communication by Ronald L. Applbaum and others (SRA, 1974, $9.95)

is for college students. High school teachers might adapt its content for their own students or use it for background reading. A bibliography suggests further resources. An instructor's guide is available.

Also helpful for background and ideas is **Discussion in Small Groups: A Guide to Effective Practice** by David Potter and Martin P. Andersen (Wadsworth Publishing Company, 1976, $6.95).

Nonverbal communication, important in both one-to-one and group interactions, is the subject of a large body of literature. **Nonverbal Communications in Human Interaction** by Mark L. Knapp (Holt, Rinehart and Winston, 1972, $6.95) provides a good introduction to that literature, including a brief bibliography for each chapter. **Body Language** by Julius Fast (Pocket Books, 1971, $1.95) is a popular treatment of the topic.

For books on applying self-knowledge to career opportunities, see **Discovering You** by Charles C. Healy in the Careers in Focus series (Gregg Division, McGraw-Hill, 1976, $4.32). Other references are cited on this topic, and on clarifying values, in the Career Awareness and Career Decision Making sections of this bibliography.

Career Awareness

Many references mentioned under the headings General and Career Decision Making may also apply to this module. See **Discovering You** cited under Self-Evaluation and Development for books on relating abilities, values, needs, and experience to career choices, in addition to the following two books: **If You Don't Know Where You're Going, You'll Probably End Up Somewhere Else** by David P. Campbell (Argus Communications, 1974, $2.25), and **Finding a Job You Feel Good About** by Clifford B. Garrison and others (Argus Communications, 1977, $2.50). Both of these are available with spirit masters for classroom use.

General Career Exploration

Facing Facts about Choosing Your Life's Work, 1968; **Facing Facts about Preparing for Your Future,** 1973; **Facing Facts about Career Opportunities for the High School Graduate,** 1973; **Facing Facts about the Two-Year College,** 1973; and **Facing Facts about Your College Career,** 1974. These are free pamphlets from Prudential Life Insurance Company.

Career World has articles on many aspects of careers, features on career fields—for example, environmental careers—and on many jobs within a field. (Curriculum Innovations, 9 issues per year, September through June. Group Subscriptions, 15 students at $3.50 per year each. Other prices on request.)

Resources that Group Jobs by Career Clusters

Occupational Outlook Quarterly contains career information, especially about new jobs emerging because of technological change, and about job trends. It lists government publications, some of them free, on labor force and career opportunities. (Bureau of Labor Statistics, U.S. Department of Labor, $4 per year. Order from the Superintendent of Documents.)

Sourcebook: The Magazine for Seniors, and Summer: Sourcebook Supplement for Seniors contain general information about decision making and about careers and career training, both civilian and military. These are free to students. (Order from Approach 13-30 Corporation.)

Worklife contains articles on U.S. Department of Labor Manpower Administration programs, and on research in vocational training and employment assistance to the disadvantaged. (U.S. Department of Labor, Employment and Training Administration, 50 cents a copy or $5.50 a year.)

Occupational Outlook Handbook is published annually by the U.S. Department of Labor, Bureau of Labor Statistics. There are 300 thorough job descriptions grouped into 13 job clusters. In addition, there are short articles on the future outlook for 35 industries making up the nine major industries in the United States. Particularly useful are the introductory sections on how to use the **Handbook,** on job trends, and where to go for more information. (Order from the Superintendent of Documents, for $7.)

Encyclopedia of Careers and Vocational Guidance, Volume I, **Planning Your Career;** Volume II, **Careers and Occupations,** William E. Hopke, Editor-in-Chief, 3rd edition (Doubleday, 1975). Volume I contains introductory chapters on choosing a career, where to get further information, using test results, how to find a job, and the future world of work. The main part of the volume consists of descriptions of the major kinds of careers and industries, including a glossary and references to the specific occupations described in Volume II. Your local library may have a copy of this book.

Career Opportunities for Technicians and Specialists, 5 volumes, edited by Walter M. Arnold (J.G. Ferguson Publishing Company). Individual volumes are **Marketing, Business and Office Specialists,** 1970; **Health Technicians,** 1970; **Engineering Technicians,** 1969; **Agricultural, Forestry, and Oceanographic Technicians,** 1969; and **Community Service and Related Specialists.** Each job description outlines the kind of work, entry level jobs, how to get in, chances for advancement, and education and personality requirements. Information on chances for advancement may be out of date.

Careers for a Changing World; Health Care; The Arts; Transportation; Business and Office; Hospitality and Recreation. Free booklets from New York Life Insurance Company.

The College Placement Annual 1976 (College Placement Council) is the official occupational directory of the Regional Placement Association. It tells what principal companies throughout the country do and which jobs they customarily offer to college graduates.

Resources Organized so the Reader Can Start from Aptitudes and Interests and Locate Career Suggestions to Take Advantage of Those Characteristics

On the Job, edited by Joseph L. Norton (Doubleday, 1971, $7.95) has chapters on office work, selling, mechanical work (working with things), managerial jobs, and working with and for people. It in-

cludes the diaries of 65 people telling what they did during a day or a week in their jobs.

Toward Matching Personal and Job Characteristics is a reprint of an article from the **Occupational Outlook Quarterly,** Spring 1975, Volume 19, Number 1. The article matches 25 common job characteristics and requirements with jobs in areas covered in the **Occupational Outlook Handbook.** It is set up in the form of a table, and a choice of characteristics such as "works as part of a team" or "works with ideas" can be checked against all the occupations that require those characteristics. Or the occupation can be checked to see which of the 25 job characteristics it requires. If your library does not have back issues of the **Occupational Outlook Quarterly,** they can be ordered from the Superintendent of Documents, at 45 cents per copy.

Modern Vocational Trends Reference Handbook by Juvenal L. Angel (Monarch Press, 7th edition, 1970, $17.50) discusses occupations by aptitudes and interests, as well as by industry.

Books That Organize Materials by Academic Subject Matter

Prospective Occupations for Liberal Arts and Science Graduates (U.S. Department of Labor, Bureau of Employment Security). This book is limited to 23 fields, but the information given for each field is useful: kinds of work a person might do with undergraduate training in the field, kinds of institutions that hire people to do this kind of work, and how far an individual can advance in the field without graduate training. No longer available for purchase, this book may still be found in a library.

Occupational Outlook Handbook booklets **Science and Your Career, English and Your Career,** and so forth (Superintendent of Documents, free), suggest job areas for those proficient in various subject areas.

The Career Exploration Series, resource materials for career education in the arts and humanities, published by Technical Education Research Centers, Inc., and for sale through the Superintendent of Documents, consists of a series of student guidebooks (for example, **Exploring Dance Careers, Exploring Careers in the Humanities**) and many other materials for teachers, such as a bibliography, a program planning guide, and **Career Guidance in the Arts and Humanities,** a book of activities, information, and resources for grades 7 through 12.

Books That Group Jobs According to How Much Education Is Required

The Guide to Career Education by Muriel Lederer (Quadrangle/New York Times Book Company, 1974, $6.95) answers the questions: What is career education? What are the alternatives? The body of the book describes 200 occupations that do not require a college degree, gives personal requirements for each one, tells what education and training are necessary, what the occupation has to offer, points to consider before going into this field, and where to write for more information.

On-the-Job Training and Where to Get It by Robert A. Liston (Julian Messner, 1973, $7.29) describes training opportunities available to high school graduates and how to qualify for the training.

After College ... Junior College ... Military Service ... What? by Newell Brown (Grosset & Dunlap, 1971, $3.95) discusses opportunities that are available after a number of years of different training and experience.

Books Addressed to Special Groups

I Can Be Anything: Careers and Colleges for Young Women by Joyce Slayton Mitchell (College Entrance Examination Board, 1978, $7.95) describes more than 100 careers. Each career description includes the nature of the work, education requirements, further reading, and information on how many women are currently in the field and where they work, what the outlook is for women, and what institutions have awarded the most degrees to women in the field recently.

Employment Opportunities for the Handicapped by Juvenal L. Angel (World Trade Academy Press, Inc., 1975, $12.50; distributed by Simon & Schuster, Inc., Technical and Reference Book Division) is a thorough and extremely useful book that considers the problems and needs of people with different kinds of handicaps, discusses where handicapped people can get help, and suggests kinds of jobs that handicapped people can do. It includes a bibliography.

Vocational Education

For a guidebook on how to evaluate vocational schools, see the booklet **Our Vocational Training Can Guarantee You the Job of a Lifetime** (Federal Trade Commission Consumer Bulletin No. 13), which can be ordered from the Superintendent of Documents for 40 cents.

The National Apprenticeship Program tells what apprenticeship is, how the national apprenticeship program operates, where apprentices are employed, and provides a list of occupations that offer apprenticeship training, and another list of administrative standards. This 42-page booklet is available free from the Inquiries Unit, Room 10225, 601 D Street, N.W., Washington, D.C. 20213.

Also available from the above source is **Apprenticeship: Past and Present,** a 28-page free booklet that traces the development of apprenticeship from colonial New England with its indentured servants to modern-day programs in industrialized society. The booklet includes charts and lists of state and territorial apprenticeship agencies.

Individual booklets on national apprenticeship standards for many trades are available free from the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, Washington, D.C. 20213.

Individual states may have apprenticeship agencies that can give information on local apprenticeships.

National trade associations will send descriptions of a trade, information on job opportunities, and recommended education. **The Occupational Outlook Handbook** typically gives the name and address

of the appropriate association. Other sources of information on this subject are the **Directory of Trade and Professional Associations of the United States** and the **Encyclopedia of Associations.**

For a free directory of accredited private trade and technical schools, write to the National Association of Trade and Technical Schools (NATTS). The **NATTS Directory** lists schools state by state, cross-references them by trade, and tells how long the training takes.

Getting Skilled by Tom Hebert and John Coyne (E.P. Dutton, 1975, $4.95) is a guide to private trade and technical schools. It contains much useful information on what trade schools are like, typical programs and schedules, what the programs cost, and what services the schools offer. The many appendixes include a reprint of the complete **NATTS Directory,** a list of consumer advice offices, and a list of research studies.

Check the library for the **College Blue Book: Occupational Education,** 2nd edition (Macmillan Information, 1976). This volume has listings of schools by state and an index by subject. Each listing gives address, telephone numbers, name of person to contact, subjects taught, number of students, whether they are male or female, whether a program is accredited or state approved, and what degrees are awarded.

The National Guidance Handbook: A Guide to Vocational Education Programs (SRA, 1975, $14) describes 146 available vocational-technical education programs and how such education relates to occupational fields and jobs. The programs are indexed by state and according to the categories in the **Occupational Outlook Handbook** and the **Dictionary of Occupational Titles.** There are also indexes of program length and work locations as well as a chapter on apprenticeships.

Directory of Special Programs for Minority Group Members: Career Information Services, Employment Skills Banks, Financial Aid, edited by Willis L. Johnson (Garrett Park Press, 1975, $9.75) contains a list of sources of information, an alphabetical list of organizations, indexes of four different kinds of programs, general employment and educational assistance programs, federal assistance programs, women's programs, and college and university programs.

College Education

The College Handbook (College Entrance Examination Board, 1977, $8.95) has a section on "Deciding Where to Go to College" that contains especially good suggestions for narrowing down your choices systematically.

Sidney Sulkin's **Complete Planning for College** (Harper & Row, 1968, $6.95) has an excellent chapter with guidelines for choosing a college as well as suggestions for what to look for when visiting a campus.

How to Get into College and Stay There (SRA, 1976, $3.50) covers the topic broadly, from thinking about whether to go to college to what college is like.

Going Right On: Information and Advice for Minority Students Who Want to Continue Their Education after High School, Carl E. Drummond (College Entrance Examination Board, 1975, minimum order 50 copies for $6) is addressed especially to minority students.

A book that covers subjects such as making decisions about college and solving problems of time, studying, and exams at college is Elwood N. Chapman's **College Survival** (SRA, 1974, $4.95).

General College Guidebooks are commonly available in libraries and bookstores as well as directly from the publisher. Many are issued annually or biennially. Check for the most recent edition.

American Junior Colleges, edited by Edmund J. Gleazer, Jr. (ACE, 8th edition, 1971, $20) gives data on two-year colleges in the United States.

American Universities and Colleges (ACE, 11th edition, 1973, $42). This guide covers about 1,200 institutions.

The Annual Guide to Undergraduate Study (Peterson's Guides Inc., $12) devotes one to two pages to each individual college.

Barron's Guide to the Two-Year Colleges consists of Volume 1, **College Descriptions,** 1974, $4.95; and Volume 2, **Occupational Program Selector,** 1975, $3.25 (Barron's).

Barron's Profiles of American Colleges groups colleges by degree of competitiveness for entry. The two separate volumes are: Volume 1, **Descriptions of the Colleges,** 1974, $6.95; and Volume 2, **Index to Major Areas of Study,** 1973, $4.95 (Barron's).

College Admissions Data, Educational Research Corporation, a looseleaf notebook, each page on a different college, includes all information on admissions requirements including scores, deadlines for submitting applications, and tests required.

College Blue Book (Macmillan Information, 16th edition, 1977) has four regional volumes, as well as **U.S. Colleges: Narrative Descriptions; U.S. Colleges: Tabular Data;** and **Degrees Offered by Colleges and Subjects.**

The College Handbook, edited by Susan F. Watts (College Entrance Examination Board, 1977, $8.95; $12.95 with **The College Handbook Index of Majors**), lists over 2,800 two- and four-year institutions and gives detailed descriptions of more than 2,000 of them.

The College Handbook Index of Majors (College Entrance Examination Board, 1977, $6.95; $12.95 with **The College Handbook**) is an index organized by major curriculum subjects, telling which colleges offer majors in each subject-matter area. More than 350 subjects in 30 curriculum areas are indexed, with references to the more than 2,000 institutions that supplied detailed information for the **Handbook.**

The Insiders' Guide to the Colleges, by the staff of the **Yale Daily News** (Berkley Medallion Books, 6th edition, 1975, $2.50), is written by students and is much more informal than the other guides.

Lovejoy's College Guide by Clarence E. Lovejoy (Simon & Schuster, $4.95) is issued biennially and includes junior colleges, technical schools, and others, as well as four year-colleges.

New York Times Annual Guide to College Selection (Quadrangle/New York Times Book Co., $4.95). Organized by score ranges on nationally administered aptitude tests, by size of institution, and by cost of institution. Contains tables of special programs.

Guides for the Disabled or for Home Study—Careers for the Homebound (President's Committee on Employment of the Handicapped, free) has a good brief list of resources, including many that are free, for home study educational opportunities, and a list of associations to write to for educational and vocational information.

Write to The National Home Study Council for the booklet **Directory of Accredited Home Study Schools, 1977-78.** It lists and briefly discusses 92 programs.

The 545-page guide, **The College Guide for Students with Disabilities,** by Elinor Gollay and Alwina Bennett (Abt Publications, 1976, $18.70) is a very thorough and comprehensive collection of information on resources for handicapped students. It includes a table of special services for handicapped students at various institutions, and another showing accessibility of campus facilities to handicapped students at those institutions.

Nontraditional postsecondary possibilities are described in **The New York Times Guide to Continuing Education in America,** edited by Frances Coombs Thomson and prepared by the College Entrance Examination Board (Quadrangle Books, Inc., 1972, $12.50). This book cites many sources of information about nontraditional educational possibilities.

Stopping Out: A Guide to Leaving College and Getting Back In by Judi R. Kesselman (published by M. Evans & Co., Inc., and distributed by J.B. Lippincott, 1976, $3.95) includes discussions of who "stops out," when and why, for how long, what to do with the time, getting credit for activities, and how to get back in.

Financing Education

These publications are helpful in explaining the kinds of financial aid offered and for tracking down multiple sources of aid.

Meeting College Costs (College Entrance Examination Board, revised annually, free) provides guidelines that help ascertain what a family might be expected to pay toward college costs so that eligibility for student financial aid can be determined. It also summarizes many federal and state scholarship and loan programs.

There are, of course, wide variations in costs among institutions. For estimates of costs, individual college catalogs should be consulted, or **Student Expenses at Postsecondary Institutions, 1978-79,** (College Entrance Examination Board, $4) which contains information on costs at about 2,700 postsecondary institutions around the country.

For a thorough discussion of financial aid sources, deadlines, and application procedures, see **The Financial Aid Guide for College,** 1977 edition, by Elizabeth W. Suchar (Simon & Schuster, Reference, Technical and Review Book Division, $5.95).

Career Decision Making

Career Planning

Most of the many recent books on career planning cover the first five of the six CSAP content areas. They start with the process of self-assessment, describe how to assess jobs, proceed through the steps of a job campaign, and often conclude with materials on what it takes to be effective on a job. They may also include discussions of setting short-term and long-term goals, and the relationship of occupational choice to lifestyle and leisure activities.

Some of these books are definitely aimed at the beginning worker. One of the most attractive of these is **What Color Is Your Parachute? A Practical Manual for Job-Hunters and Career-Changers** by Richard Nelson Bolles (Ten Speed Press, 1972, $4.95) and its companion **Where Do I Go from Here with My Life?** by John C. Crystal and Richard N. Bolles (Seabury Press, 1974, $7.95). The former is for individuals to use on their own; it contains lots of practical advice. The latter could be used without guidance by students who are highly motivated but would be difficult for those who are not. It is also organized with separate instructions for a counselor in a one-to-one situation and for counselors working with groups. There are many exercises, including suggestions for field trips for interviewing and information gathering.

Career Search: A Personal Pursuit by Elwood N. Chapman (SRA, 1976, $4.95) presents a 20-step career-search process that involves searching for and analyzing career prospects and includes steps for evaluating alternatives and narrowing the choices to one.

Career Perspective: Your Choice of Work by Celia Denues (Wadsworth Publishing Company, 1972, $4.95) focuses on the process of choosing a career up to the job hunt and considers occupational choice as part of lifetime career planning. Not as lively in appearance as the Bolles book, it is nevertheless full of information, questions for discussion and exploration, and bibliographic references that follow each chapter. **A Career Perspective Workbook** by Celia Denues (Charles A. Jones Publishing Company, 1975, $3.95) supplements this book but can also be used by itself. In addition to forms for completing a personal inventory, it has such things as an outline for interviewing people about their jobs, forms for conducting a community employment survey, and questions for evaluating a speaker on a career topic. **Career Perspective** might be too advanced for some high school students. The **Workbook** is simpler.

The Art of Developing a Career: A Student's Guide by Theodore W. Friel and Robert R. Carkhuff (Human Resource Development Press, 1974, $6.95) breaks the process of career planning into three

stages: exploration (assessing self and expanding career alternatives), understanding (narrowing career alternatives), and action (developing a career). It intersperses text with workbook features like charts to fill in and questions to answer. **The Art of Developing a Career: A Helper's Guide** ($9.95) adds to the text of the **Student's Guide** discussion and suggestions for an instructor. **What to Do after High School** by Charles G. Spiegler and William B. Reiner (SRA, 1971, $4.87) contains a similar mixture of text and do-it-yourself pages.

William H. Pivar's **Work Experience Handbook** (Canfield Press, 1976, $5.95) and Dean C. Dauw's **Up Your Career** (Waveland Press, Inc., 1977, $3.95) also combine text and workbook features. These are simple enough to be used by students without guidance.

Planning Ahead for Career Choice by Dorothy J. Jackson (Cornell Institute for Research and Development in Occupational Education, 1976, $2.95) is a complete minicourse for senior high school students. Directions for classroom activities are supplemented by suggestions for leaders and a brief bibliography.

Your Career: How to Plan It, Manage It, Change It by Richard H. Buskirk (Cahners Books, Inc., 1976, $1.95) would appeal as background reading to more advanced students and to teachers. Also excellent for background and for an overview is Burdette E. Bostwick's **Finding the Job You've Always Wanted** (John Wiley and Sons, 1977, $12.95). Most of the material is intended for managers, but the excellent chapter on interviewing applies to people at all levels.

Many other career planning books are intended for college students or college graduates. However, the basic ideas presented and processes described are the same as those in the guides for younger people. Some high school students may prefer these to the more elementary presentations designed especially for them. **College to Career: Finding Yourself in the Job Market** by John Shingleton and Robert Bao (McGraw-Hill, 1977, $5.95) discusses the entire process from assessing oneself to conditions on the first job and plans for future jobs. **Career and Life Planning,** College Edition, by Joseph W. Hollis and Lucile U. Hollis (Accelerated Development, Inc., 1976, $8.95) is intended to be used in a course on career planning.

Other career planning books are addressed to those who have already worked for a while and are ready to change jobs. Written by John W. Loughary and Theresa M. Ripley, **Career and Life Planning Guide** (Follett, 1976, $5.95) addresses especially those who are dissatisfied and attempts to help them analyze their dissatisfactions (what they don't like about present jobs) and change them to positive goals (what they want in future jobs). **Starting Over** by Damon Stetson (Macmillan, 1971, $5.95) describes the stories of several people who have made successful major career changes. **Moving Up: How to Get High-Salaried Jobs** by Eli Djeddah (Ten Speed Press, 1971, $3.95) contains solid advice for conducting a job campaign, applicable to first job searches as well as later ones.

Materials published by Catalyst are designed especially for women; however, men could learn from them, too. Some of the materials, like the self-guidance booklets, **Planning for Work** (Catalyst, 1973, $1.75), **Your Job Campaign** (Catalyst, 1975, $1.75), and the **Résumé Preparation Manual** (Catalyst, 1976, $3.50), are directed to the woman who has been raising a family and is thinking about resuming a career or starting a new one. **Planning for Career Options** (Catalyst, 1976, $1.95) and **Launching Your Career** (Catalyst, 1976, $1.95) are part of a career options series for undergraduate women. All are clearly written and contain useful information and well-framed questions for the reader to work with.

Making Decisions

For an introduction to the topic of decision making, some of these references might be helpful. **Developing Decision-Making Skills,** edited by Dana G. Kurfman (National Council for the Social Studies, 47th Yearbook, 1977, $9.95) contains eight articles that put decision making in context as a thinking skill and as part of the curriculum in elementary and secondary education. "Decision Making and Career Development," Chapter 8 in **Career Development: Theory and Research** by John J. Pietrofesa and Howard Splete (Grune and Stratton, 1975, $14) also provides useful background reading for the teacher. **The Art of Problem Solving: A Guide for Developing Problem-Solving Skills for Parents, Teachers, Counselors and Administrators** by Robert R. Carkhuff (Human Resource Development Press, 1973, $5.95) offers a model similar in outline to that of CSAP's Career Decision-Making Skills module but somewhat more complex. **Identifying and Solving Problems: A Systems Approach** by Roger Kaufman (University Associates, 1976, $5) is also designed for teachers and counselors. **Forum: Creative Decision Making,** Fall/Winter 1973 (J.C. Penney Co., Inc., $1.25) concentrates on creativity in problem solving and includes a few suggestions for classroom activities.

Some materials are designed specifically for groups under adult direction. **Deciding** (for junior high students, $2.50; leader's guide, $2.00; combined price, $4.00) and **Decisions and Outcomes** (for senior high students and older, $2.50; leader's guide $3.00; combined price $4.00) by H.B. Gelatt and others (College Entrance Examination Board, 1973) contain thought-provoking questions for awakening students to what is involved in the process of deciding.

Kit 272, "Goals, Decision-Making", in the series of values clarification theme kits called **Making Sense of Our Lives** by Merrill Harmin (Argus Communications, 1974, $7.50 each packet) contains six packets, each of which has activities for students and discussion suggestions for teachers.

Other materials are designed for solo use. **Effective Personal and Career Decision Making** by Karl Bartsch, Elizabeth B. Yost, and Kristen W. Girrell (Edupac, Inc., 1976, $8.95), designed for people of college age, is systematic and clear; it moves from "Understanding Yourself" through "Processing Deci-

sions" to "Implementing Decisions." Less systematic (and, therefore, perhaps more appealing to some students) is **The Universal Traveler: a Soft-Systems Guide to: Creativity, Problem-Solving and the Process of Reaching Goals** by Don Koberg and Jim Bagnall (William Kaufman, Inc., 1976, $5.45).

One part of the decision-making process that has received a great deal of attention lately is values clarification. **Moral Education ... It Comes with the Territory** (McCutchan, 1976, $13.50), a collection of essays edited by David Purpel and Kevin Ryan, places the teaching of values clarification in the broader context of morals and education. **Values and Teaching: Working with Values in the Classroom** by Louis E. Raths, Merrill Harmin, and Sidney B. Simon (Charles E. Merrill Publishing Co., 1966, $5.50) has many suggestions that teachers could adapt to career education. **A Practical Guide to Value Clarification** by Maury Smith (University Associates, 1976, $10) is also addressed to teachers and contains many exercises for classroom use.

Deciding for Myself: A Values Clarification Series by Wayne Paulson (Winston Press, 1974, $14) is a set of exercises in loose-leaf format with many questions about attitudes, preferences, thoughts, and feelings, and spaces for the participants to write in their answers. It is organized into four units: "Clarifying My Values," "My Everyday Choices," "Where Do I Stand?" and "Exploring Traditional Values." There is also a teacher's guide ($5.25).

Meeting Yourself Halfway: 31 Values Clarification Strategies for Daily Living by Sidney B. Simon (Argus Communications, 1974, $4.95) has many suggestions students could carry out on their own. **Values Tech** by Don Koberg and Jim Bagnall (William Kaufmann, 1976, $6.95) is also intended for individuals to use without direction. An offbeat approach, it's for the student who resists more conventional books.

For books on identifying alternatives, another important part of the decision-making process, see the materials discussed under Career Awareness.

Employment Seeking

There are plenty of books that outline the steps to take once a person has identified the kind of job he or she wants. Most go briefly over the self-assessment phase and then focus on finding out where the jobs are, writing résumés and letters of application, filling out application forms, being interviewed, and taking appropriate follow-up steps. Books that put the process of hunting for a job into the broader framework of career planning are discussed under references for Career Decision Making.

The Whole Process

Seven Steps to Finding YOUR Place in the World of Work by Irving Eisen (B'nai B'rith Vocational Service, 1971, $1.50) and **How to Find and Apply for a Job** by John A. Kushner and Helen J. Keily (South-Western, 1975, $2.32) are excellent brief treatments that students can use on their own. So is **Can I Get the Job,** available free from General Motors Corporation.

These books go further than the brief summary treatment:

Robert R. Carkhuff's **GETAJOB** (Human Resources Development Press, 1975, $6.95) is lively and informative.

Job Power Now: The Young People's Job Finding Guide by Bernard Haldane and others (Acropolis Books Ltd., 1976, $6.95) helps first-job seekers assess their skills and identify what they can offer to an employer.

Job Hunting Secrets and Tactics by Kirby W. Stanat with Patrick Reardon (Westwind Press, 1977, $4.95) is a little more advanced; it includes college students in its intended audience. Especially good are discussions on how to take different routes to get an interview (through a recruiter, employment agency, placement center) and the importance of knowing about the company in order to discuss intelligently the contribution the job seeker hopes to make.

The following books, all paperbacks, are intended for classroom use:

The Job You Want and How to Get It by Walter L. Blackledge and others (South-Western, 1975, $2.52) is a workbook, interspersing text with space for the student to fill in information and answer questions.

Ross Figgins' **Techniques of Job Search** (Canfield Press, 1976, $3.95) is thorough and informative, but its typewritten format may make it unappealing to students.

Bert Fregly's **How to Get a Job** (ETC Publications, 1974, $5.95) is thorough and well done, although the questions at the end of each chapter and the separately available spirit masters examine only reading comprehension.

How to Get a Job and Keep It by Dorothy Y. Goble (Steck-Vaughn, 1975, $1.44) is simpler than the others mentioned both in its presentation and in the questions posed for students to answer. A teacher's manual is available.

Carl McDaniels' **Finding Your First Job** (Houghton Mifflin, 1975, $1.95) is excellent. The leader's guide goes beyond simple questions and answers to suggest many classroom activities.

For a different approach, **Applying for a Job** by Patricia Mink Rath and others (The Interstate Printers & Publishers, Inc., 1968, $4.95) provides a set of cards for students to use on their own. Each card has a multiple-choice question on the front and the answer on the back. There is no text to explain why the answer is the correct one.

Several choices are available for slow learners:

William A. Fraenkel's **How to Get a Job** (The President's Committee on Employment of the Handicapped, 1977, [$1 for a single copy, 55 cents each for two or more] is comparable to the B'nai B'rith booklet listed above.)

Getting Jobs (Scott, Foresman, 1972, 99 cents) is part of a series called **People and the City.** It is simply written and attractively illustrated and might be used in a language arts course.

Yvette Dogin's **Help Yourself to a Job** (Finney Company, 1977, $5.25) is a series of three workbooks that present materials simply and in small steps.

Jeri Schapiro's **The Jobs Book: How to Find and Keep a Job** (Scholastic Book Services, 1976, $1.25) may appeal to some students because its presentation varies from narrative to cartoon to drama. A teaching guide is available.

Janus Book Publishers has a collection of materials designed for students with special needs. They are attractively laid out and illustrated with photographs or drawings. A series of booklets, **People Working Today,** tells stories about people in specific jobs; a series of workbooks, **Career Education Materials,** includes the **Janus Job Planner** (1976, $2.85), **My Job Application File** (1975, $1.95), **Janus Job Interview Guide** (1977, $3.25), and **Using the Want Ads** (1977, $2.45). **The Janus Job Interview Kit** (1976, $23.95) has a set of cards, each with a photograph of someone doing a job. On the back of each card are a job description and questions for the interviewer. Also included are a teacher's guide and spirit masters of an application form, interview rating form, and an interview progress record.

Job Facts

To introduce students to materials that will inform them of job requirements, forecasts of employment trends, wage rates, and the like, publications helpful in this area are: the **Occupational Outlook Handbook** (Superintendent of Documents, $6.85), **Area Wage Surveys** (call the nearest office of the U.S. Department of Labor for information about obtaining these), and **Employment and Earnings** (Superintendent of Documents, $2.70). These references are commonly found in public libraries, as are also many references listed under Career Awareness that are appropriate for locating job classifications, job descriptions, and information about trends in major United States industries.

Interviews

John Keefe's **The Teenager and the Interview** (Richards Rosen Press, 1971, $4.80) is addressed to the teenager but would probably be more useful for the teacher in suggesting important areas to cover in learning about interviews and in providing bibliographic suggestions.

Successful Interviewing by Marion Sitzmann and Reloy Garcia (National Textbook Company, 1976, $2.50) is useful in providing a number of practice interview situations that can be used in the classroom and a chart for rating interview performance.

Résumés and Application Forms

Two books that give dozens of examples of résumés of different sorts are **Job Résumés** by J.I. Biegeleisen (Grosset & Dunlap, 1976, $1.95) and **How to Write Better Résumés** by Adele Lewis (Barron's, 1977, $2.95). Both summarize briefly the purposes of a résumé and the forms it can take, and touch on topics like cover letters, interviews, and follow-up steps.

Résumé Writing: A Comprehensive How-To-Do-It Guide by Burdette E. Bostwick (John Wiley & Sons, 1976, $10.50) is good as background information for the teacher. It is more thorough in its discussion of various kinds of résumés than the two books mentioned above.

Résumé Preparation Manual (Catalyst, 1976, $3.50) is clearly written and provides space on the page for writing in the information needed for preparing a résumé. It is designed for women, but the step-by-step process applies to men, too. (See the discussion of more Catalyst materials in the section on career planning books on page 85.)

How to Complete Job Application Forms by C. Todd Strohmenger (National Vocational Guidance Association, 1975, 75 cents, 5 percent discount on multiple orders) gets a lot of information into a small space.

Miscellaneous Topics

Mademoiselle offers reprints of its vocational articles at 50 cents each. Some of the titles are: "How to Find a Job," "How to Write a Résumé," "How to Manage your Time," and "Job Strategies." You can get a free list of the articles by writing to **Mademoiselle.**

Work Effectiveness

Teachers who want a broad introduction to the topic of work effectiveness may wish to start with a good college-level textbook like **Human Behavior at Work: Organizational Behavior** by Keith Davis (McGraw-Hill, 1977, $13.95), which introduces the fundamental topics of motivation, management styles, work environments, human relations and communications in organizations, and others and includes enough bibliographic references to acquaint readers with the literature about management. A study guide is available for $5.95 and an instructor's manual for $3.95. David Jenkins' **Job Power: Blue and White Color Democracy** (Penguin Books, 1974, $2.95) is about industrial democracy, that is, transferring responsibility for decision making from management to workers. Jenkins reports on experiments in worker participation in management around the world.

Employer-Employee Relations

See the **Handbook of Modern Personnel Administration,** J. Famularo, ed. (McGraw-Hill, 1972, $48), for many articles on employer-employee relations. Another source of materials and information on this topic might be local companies that are willing to share their employee manuals as samples of how an employer orients an employee to a job, statements of company policies, and the like.

The booklets **The Supervisor's EEO Handbook: A Guide to Federal Antidiscrimination Laws and Regulations; Understanding EEO: The Supervisor's Case Book;** and **Conducting the Lawful Employment Interview** (Executive Enterprises Publications, 1974, $2 each for single copies; reduced prices for multiple copies) explain federal Equal Employment Opportunity laws. In addition, they include short case descriptions that would provide good material for class discussion.

For more information on equal employment opportunity, the two-volume paperback **Affirmative Action and Equal Employment: A Guidebook for**

Employers (U.S. Equal Employment Opportunity Commission, 1974; for sale by the Superintendent of Documents or from regional offices of the Equal Employment Opportunities Commission, $2.45) might be helpful.

Case descriptions in the monthly newsletter **Employee Relations in Action** (Man & Manager, Inc., $10 per year) dramatize employer-employee disagreements about many different employment policies such as those involving safety, free speech, absenteeism, and others.

Effective Work Habits and Attitudes

There are suggestions for specific classroom activities for teaching work effectiveness in **Methods and Materials for Teaching Occupational Survival Skills,** developed at the University of Illinois and to be published in 1978. Inquiries should be directed to Dr. Robert E. Nelson, 346 Education Building, Department of Vocational and Technical Education, University of Illinois, Champaign, Illinois 61801.

How to Keep from Getting Fired by Auren Uris and Jack Tarrant (Henry Regnery, 1975, $10) starts with the idea that especially in times of recession or depression employees need to know how to hold on to a job. It covers habits and attitudes that are likely to make an employee valuable to the employer at any time. **Job Keeping** by David Noer (Chilton Book Company, 1976, $7.95) approaches the topic from the angle of finding out when layoffs or firing may be ahead and suggests what can be done to avoid being involved in these events. Richard K. Irish's **If Things Don't Improve Soon I May Ask You To Fire Me** (Anchor Books, 1976, $3.50) addresses the manager who has to fire employees. All three of these books are somewhat flippant, but all three contain advice on what it takes to be valued by an employer.

Succeeding on the Job by Patricia Mink Rath and others (The Interstate Printers & Publishers, Inc., 1970, $4.95) is a set of cards for students to use on their own. Each card has a multiple-choice question on the front and the correct answer on the back. There is no discussion of why the answer is correct.

Human Relations

Human behavior and human relations are the subjects of many books. Only a few that treat these topics specifically in relation to working are mentioned here. **Psychology: Human Relations and Motivation** by Donald A. Laird and others (Gregg and Community College Division, McGraw-Hill, 1975, $12.95) is a textbook for a high school psychology course that introduces basic concepts in psychology, from learning theory and theories of perception—how we see, hear, and speak—to leadership styles, and discusses their application to the business world.

Human Relations in Business by Steven A. Eggland and John W. Williams (South-Western, 1977, $4.88) is about how to get along at work. An informal textbook with charts and drawings. Also informal, but not a textbook, is Auren Uris's **The Bluebook of Broadminded Business Behavior** (Thomas Y. Crowell, 1977, $14.95). It is aimed at a wide audience and is about all aspects of getting along at work, starting with how to behave at an interview and going as far as how to handle social contacts with the boss after working hours and other matters of office etiquette and ethics.

Three books by Elwood Chapman all deal with the general topic of human relations at work: **Work Experience Survival Kit** (Goodyear Publishing Company, 1973, $5.95) is intended for the student on a work experience assignment and includes advice about a lot of good work habits as well as getting along with others. **Your Attitude Is Showing: A Primer on Human Relations** (SRA, 1972, $5.95) applies to all work situations. Each chapter ends with a description of a problem. A suggested solution to each problem appears at the end of the book. A leader's guide is available. **Your Attitude Is Changing** (SRA, 1966, $4.76) is designed for slow learners. It introduces the idea of developing a positive attitude toward work, describes different kinds of jobs, and makes suggestions on how to keep a job and move up to a better one. A teacher's guide is available.

Giving and Receiving Supervision

In a fourth book, **Supervisor's Survival Kit** (SRA, 1975, $5.50), Chapman suggests that being effective in dealing with other people is the key to being a successful manager. The book also covers other skills demanded of a good manager: ability to delegate work, to set priorities, to manage time well, and more. Each chapter includes discussion questions, suggestions for optional activities, and ends with a game in which class members act out a situation that illustrates the topic of the chapter. There is also a leader's guide.

Lester Bittel's **What Every Supervisor Should Know** (McGraw-Hill, 1974, $12.95) is a thorough textbook on the topic of being a good manager. An instructor's manual is available. O. Jeff Harris, Jr. has written a set of self-teaching booklets called **How to Manage People at Work** (John Wiley & Sons, 1977, $29.95 a set). They might be used by individual students for independent study or by teachers as resources for planning classroom units. Two booklets published by Executive Enterprises Publications address supervisory problems: **The Three Toughest On-the-Job Problems** (1974) is about problems women may face as supervisors; **The Supervisor's Responsibility for Profit** (1975) explains what the title states. (Each costs $2 if ordered singly; reduced prices are available for multiple copies.)

Communications

Closely related to the subject of human relations at work is the topic of communications. Many books on communications have been mentioned in the Self-Evaluation and Development section of this bibliography. Books mentioned in this section are only those that discuss communications specifically as it applies in organizations. For background reading and good bibliographic references, try **Interpersonal Communication in Organizations** by Richard C. Huseman, James M. Lahiff, and John D. Hatfield (Holbrook Press, 1975, $11.95). About half the book discusses theoretical considerations in communications; the other half discusses different kinds of communications in business: interviews of various kinds, small group conferences, business letters, and

speeches. William C. Morris and Marshall Sashkin have written a textbook-workbook **Organization Behavior in Action: Skill Building Experiences** (West Publishing Company, 1976, $8.95) for use in college courses. The exercises and suggestions in the instructor's manual could be adapted for use in high school. The 10 chapters include such topics as generating and sharing information, working in groups, dealing with conflict, determining the effects of actions, and solving problems. **Understanding and Using Communication in Business** by Joel P. Bowman and Bernardine P. Branchaw (Canfield Press, 1977, $8.95) covers many of the same topics and includes sections on writing and speaking skills. This one is for high school students.

Job Advancement and Job Change

For books about advancing on the job or changing jobs, see the discussion of books about career planning under references for Career Decision Making.

Other Issues

For those who would like to probe the areas of motivation, job satisfaction, and job enrichment, the following books are recommended. Scott Myers' **Managing without Unions** (Addison-Wesley, 1976, $8.95) is about the effect of unions on worker motivation and relationships with management. **Job Satisfaction: Is There a Trend?** (U.S. Department of Labor, Manpower Research Monograph No. 30, 1974, 95 cents from the Superintendent of Documents) discusses the relationship between job satisfaction and productivity, various theories of the relationships between job satisfaction and satisfaction in other areas of life, the ways in which workers express dissatisfaction, and other ideas related to job satisfaction. **New Perspectives in Job Enrichment,** edited by John R. Maher (Van Nostrand Reinhold Company, 1971, $11.95), contains 11 articles on theoretical issues and experiments in progress on job enrichment.

Personal Economics

General—Material Covering Some or All of the Topics in the Personal Economics Module

Money management, personal finances, consumer education, business, economics for consumers are some of the titles used for courses that cover the topics in personal economics. Many textbooks are available. Teachers who are integrating personal economics into a career education curriculum may want to use those mentioned below as reference sources.

These five books for high school students cover the topics of business, insurance, money and banking, credit, consumer credit and protection, and so on. Each title indicates its particular slant.

General Business for Everyday Living, 4th edition, by Ray G. Price, Vernon A. Musselman, and J. Curtis Hall (Gregg Division/McGraw-Hill, 1972, $9.96).

General Business for Economic Understanding, 11th edition, by S. Joseph DeBrum and others (South-Western, 1976, $7.88).

Consumer Decision Making by Roman F. Warmke, Eugene D. Wyllie, and Beulah E. Sellers (South-Western, 1972, $7.76).

The American Consumer: Issues and Decisions by Herbert M. Jelley and Robert O. Herrmann (Gregg Division/McGraw-Hill, 1973, $9.60).

Your Family and Its Money, revised edition, by Helen M. Thiel with the collaboration of Melinda Holcombe (Houghton Mifflin, 1973, $8.68).

These three textbooks are written for college students:

Personal Money Management, 2nd edition, by Thomas E. Bailard, David L. Biehl, and Ronald W. Kaiser (SRA, 1977, $11.16).

Personal Finance, 5th edition, Elvin F. Donaldson and John K. Pfahl (Ronald Press, 1971, $11.50).

Personal Financial Management by David A. West and Glenn L. Wood (Houghton Mifflin, 1972, $12.95).

For the layperson, one of the most useful books on money management is **Sylvia Porter's Money Book** (Avon Books, 1976, $5.95). It is comprehensive, readable, and suitable for all ages. J.K. Lasser's **Managing Your Family Finances** (J.K. Lasser Tax Institute, 1976, $12.50), less comprehensive, is designed to help people set up a plan for family finances. **The New York Times Book of Money** by Richard E. Blodgett (Quadrangle/The New York Times Book Co., 1971, $9.95) contains much information that is made easily accessible by the use of marginal heads and questions.

Popular periodicals like **Money** Magazine may also be a source of information and background material.

Many materials are available for classroom use. Household Finance Corporation's **Money Management Library** is a boxed set of 12 booklets and a teacher's guide (most of the booklets were revised and reprinted in 1975 and 1976). The topics covered include savings and investment, consumer information and advice on buying clothing, food, and automobiles, and using credit.

Guidelines for Teaching Personal Money Management, prepared by William L. Johnston and others (New York Stock Exchange, 1974, $1), is a concise and well-organized course outline, including objectives, suggested activities, and resources.

Suggested Guidelines for Consumer Education, DHEW Publication No.(05)74-109 (U.S. Department of Health, Education, and Welfare, Office of Consumer Affairs, 1974, $1.05) suggests different approaches to consumer education and instructional resources for all age levels.

The Contemporary Consumer Series, edited by Max O. McKitrick (Gregg and Community College Division/McGraw-Hill, 1975, $3.32 each) consists of eight booklets on subjects like financial security, money management, protection and the law, and understanding the marketplace. Each chapter ends with some helpful exercises and evaluative material. Teacher's manuals are also available.

Four booklets, **Knowing How to Budget and**

Buy; Understanding Consumer Credit; Insuring Your Life, Income, and Property; and **The Law for You,** by H. Mac Bohlman, Herbert W. Bohlman, and Edna McCaull Bohlman make up the **Accent/Consumer Education Series** (Follett, 1975, $5.52). These are easy to read. The accompanying instructor's guide suggests projects and problems for discussion in all four booklets.

Case descriptions of consumer education programs in several schools are the strong point of **Secondary Level Consumer Education,** one of six books in the **Consumer Education Materials Project** (Consumer Union, 1973, $15). Four of the books concentrate on the remaining education levels from kindergarten to adult, and the sixth is called **Preparing the Consumer Educator.**

Consumer Education: A Guide for the Community College by Lawrence W. Erickson and Barbara S. Simi (Education Services, institute of Life Insurance, 1973, $2.50) is an outline for a consumer education curriculum for the community college. It includes an outline of concepts, objectives, suggestions for teaching and learning activities, and a list of resource materials.

General—Materials for Less Able Students

For slow learners there is the **Mathematics in Living** series by Robert G. Weiland and Steve J. Woytek (Pruett Publishing Company, 1970, $2.95). There are four books of practical exercises: **Buying; Wages and Budgets; Banking;** and **Credits, Loans, and Taxes;** and a teacher's answer book.

Personal Finances (Division of Vocational Education, State of Florida Department of Education, 1977, $2.04 plus postage) confines itself to paychecks, taxes, bank accounts, consumer credit, and budgeting. An instructor's guide is included. Aimed at high school students but written at the fifth-grade level, it contains many concrete tasks like filling out forms. Five other booklets and instructor's guides are available in the **Employability Skills Series.**

Environmental Survival Skills is a set of materials designed for undereducated adults who have trouble coping with everyday affairs. There is a manual for students, four booklets of mastery tests (**Consumer Economics; Credit; Money and Banking;** and **Money Management**) and a Resource Manual for the instructor (MIND, Inc., 1968, $12).

Taxes

Understanding Taxes, Publication 21 of the United States Department of the Treasury, Internal Revenue Service is an impressively clear introduction to federal income taxes, including instructions for filling out the forms and examples to practice with. A teacher's guide is also available.

The standard forms and booklets of instructions produced annually by the Internal Revenue Service and various commercial guides, the most familiar of which may be J.K. Lasser's **Your Income Tax** (Simon & Schuster, published annually, 1978 edition, $2.95), are useful for instruction.

Banking

Banks are good sources of materials about money management as well as banking operations and services. Each bank publishes its own booklets for customers. Materials applicable to most banks are also available. **How to Manage Your Money** and **Bank Services and You** are readable and informative booklets prepared by the American Bankers Association.

Keeping Our Money Healthy and **The Story of Checks** explain the Federal Reserve System and are available from The Federal Reserve Bank of New York. Most of these materials are free.

Consumer Affairs and Credit

Most material on consumerism, except for the textbooks mentioned earlier, is addressed to the layperson and is not designed for teachers or classrooms. However, it can be used for classroom work.

Free booklets of advice on buying almost any product can be obtained from local Better Business Bureaus. Monthly periodicals like **Consumer Reports, Consumers' Digest,** and **Consumers' Research Magazine** compile facts about products to help the consumer compare prices and quality. **Consumer News,** a biweekly newsletter (U.S. Department of Health, Education, and Welfare, Office of Consumer Affairs, $4 a year) keeps consumers aware of government actions related to consumer issues. HEW also publishes a booklet, **Guide to Federal Consumer Services** (DHEW Publication No.(05) 76-512, 1976), which names and describes the function of federal agencies serving consumers.

The Federal Trade Commission (FTC), too, issues many booklets of consumer information, providing information on rights on contracts, buying tips, advice on how to avoid being cheated, and what to do about delivered but unordered merchandise. Many of the booklets are free. A list of publications and prices is available from the FTC.

Help: The Useful Almanac (Consumer News Inc., 1976, $4.95) has buying tips, money-saving advice, and consumer information on a wide range of topics: health care, costs of mortgage loans, comparisons of insurance and pension plans, energy-saving measures, and so on.

Simpler to read and less broad in scope but similar in purpose is **The Consumer Survival Book: How to Fight Inflation** by Marvin L. Bittinger (Barron's, 1976, $4.25).

Consumer Complaint Guide 1977 by Joseph Rosenbloom (Macmillan Information, 1977, $4.95) gives some advice on how to pursue a complaint but devotes most of its pages to lists of organizations, including government agencies, that assist consumers or are involved in protecting consumer rights. John Dorfman's **A Consumer's Arsenal** (Praeger Publishers, 1976, $3.95) focuses entirely on tactics for pursuing a complaint.

Your Consumer Credit Rights by Douglas R. Stanton (Major Books, 1975, $1.25) summarizes people's right to receive credit and find out about their credit rating, and gives advice on avoiding being taken advantage of when borrowing money, using credit cards, or arranging a mortgage.

A number of free booklets on credit practices and principles are available from the National Foundation for Consumer Credit, Inc., including one called **The Consumer and Truth in Lending,** which summarizes federal regulations on what information the seller is obliged to provide the buyer when credit is extended.

Using Credit Wisely, A Teacher's Guide to Credit Unions, and other brief publications explain credit unions (Credit Union National Association, Inc., single copies are free; multiple copies 75 to 90 cents, depending on quantity ordered).

Insurance

A number of organizations are good sources of publications on insurance. Many are free (single copies) or inexpensive (under $1 each, multiple copies). Four major organizations and some of their publications are mentioned here.

The American Council of Life Insurance publishes an annual **Life Insurance Fact Book** with summary data on the life insurance industry; a booklet called **Decade of Decision** (1976) with explanations of various kinds of insurance and charts and graphs to illustrate such things as costs at different ages; **A Date with Your Future,** a simple presentation suitable for high school students that provides basic information on money management, a sample life insurance policy for study, and other materials.

From the Institute of Life Insurance the following material is available: **1976 List of Worthwhile Life and Health Insurance Books** and **Publications and Audio-Visual Aids on Life and Health Insurance,** a catalog of materials in various categories, including one of materials for schools, such as a periodically issued newsletter, **Teaching Topics,** and booklets like **Policies for Protection: How Life Insurance and Health Insurance Work.** There are also booklets like **How Much Life Insurance Is Enough?** and **A Guide to Life Insurance for Women Only** that present information briefly and clearly and are directed toward nonschool audiences, and **The Nature of the Whole Life Contract,** an insurance industry counterargument to attacks by consumer-oriented groups.

The Health Insurance Institute annually issues a **Source Book of Health Insurance Data** plus other booklets, such as **The Health Insurance Answer Book,** that present basic information on health insurance.

The Insurance Information Institute puts out a booklet called **Chances are ....** a very clear programmed learning explanation of the concept of risk, as well as various leaflets and posters on different kinds of insurance.

Information on federal programs like social security and state programs like unemployment and disability insurance can be acquired by contacting the appropriate agencies by phone or mail.

Finally, to counteract any bias in the information produced by these insurance industry affiliated organizations, see **What's Wrong with Your Life Insurance** by Norman F. Dacey (Collier Books, 1966, $1.95) and **The Consumer's Guide to Life Insurance** by J. Tracy Oehlbeck (Pyramid Books, 1975, $1.75).

Investing

Dozens of books about investing have been published for the layperson. Two that provide a sound introduction to the field are **A Random Walk down Wall Street** by Burton G. Malkiel (W.W. Norton, 1975, $2.95) and **William Rickenbacker's Savings and Investment Guide** by William F. Rickenbacker (David McKay, 1976, $9.95).

The investment industry, like the insurance industry, produces many free or inexpensive publications that are useful for learning about investments. Among American Stock Exchange offerings is **Journey through a Stock Exchange,** a history and description of stock exchanges that students might find appealing because of its illustrations and simple text. (Single copy free to teachers using school letterhead; bulk rates: 25 cents each up to 250 copies; 20 cents each for additional copies over 250 in lots of 25). The New York Stock Exchange offers **The Language of Investing,** a glossary of investment terms, booklets such as **Understanding Convertible Securities, Understanding Bonds and Preferred Stocks,** and **Understanding Financial Statements** (16 cents each under 500 copies; 12 cents each over 500), **You and the Investment World,** a booklet of information with suggestions for classroom activities, and other material. Stockbrokers Merrill Lynch Pierce Fenner & Smith, Inc.'s **How to Read a Financial Report** is clear and thorough but may be difficult for beginners. Dow Jones & Company publishes **Barron's,** a weekly financial magazine, in addition to other publications prepared by its Educational Service Bureau. Investment Company Institute is the source of information about mutual funds, such as the **1976 Mutual Fund Fact Book** and the booklet **A Woman's Guide to Mutual Funds.** Dun & Bradstreet, Inc.'s, Business Economics Division puts out several weekly, monthly, and quarterly publications. Write for prices and titles.

Economics

The American Economic System ... and Your Part in It is a 20-page booklet that gives a very brief introduction to economics concepts, enlivened by "Peanuts" drawings. Single copies are free from Economics, Pueblo, Colorado 81009. For information about bulk orders contact The Advertising Council, Inc.

Jim Eggert's **What is Economics?** Experimental Edition (William Kaufmann, Inc., 1975, $3.95) is, in the author's words, "an informal narrative of economic ideas" with lots of examples from everyday experience to illustrate abstract ideas. **Economics from the Consumer's Perspective** by Lewis Mandell (SRA, 1975, $8.76) is a solid textbook for advanced high school students. It has discussion questions and reference sources at the end of each chapter. There is also an instructor's guide. **Economics in Our Time: Concepts and Issues** by Dwight R. Lee and Robert F. McNown (SRA, 1975, $3.16) is a brief, issue-oriented text for college students. An instructor's manual is available.

Instead of using a textbook, some teachers may prefer to use an outline, which can more easily be modified to suit individual needs. **Teaching Personal Economics in the Social Studies Curriculum** and **Teaching a Course in Personal Economics** contain classroom suggestions, objectives, and resources. There is also a **Test of Understanding in Personal Economics** with an **Interpretive Manual and Discussion Guide** (Joint Council on Economic Education, 1971, $6).

Many brief treatments of economics or individual topics in economics are available. **Introducing Economics: The Study of Economics Is Really the Study of People Living and Working Together** (Federal Reserve Bank of Boston, 1974, free) is a good resource for teachers. It groups concepts under eight general headings and gives concrete examples of each concept at work. The Federal Reserve Bank of Philadelphia publishes pamphlets in a **Series for Economic Education.** Some of the titles are: "The Price System," "The Mystery of Economic Growth," and "Automation." The Federal Reserve Bank of New York, too, has materials such as **Money: Master or Servant?** and **Money and Economic Balance.** The American Institute of Cooperation and the National Schools Committee for Economic Education also issue materials for teachers. The latter has a series of booklets on how to teach various economic principles without using formal economics, and others that include suggestions for classroom activities and resource materials. Write to these organizations for further information about titles and prices.

Names and Addresses of Publishers

Abt Publications, 55 Wheeler St., Cambridge, Massachusetts 02138

Accelerated Development Inc., P.O. Box 667, Muncie, Indiana 47305

Acropolis Books Ltd., 2400 17th St., N.W., Washington, D.C. 20009

Addison-Wesley Publishing Company, Inc., Jacob Way, Reading, Massachusetts 01867

The Advertising Council, Inc., 825 Third Ave., New York, New York 10022

Allyn and Bacon, Inc., 470 Atlantic Ave., Boston, Massachusetts 02210

American Bankers Association, 1120 Connecticut Ave., N.W., Washington, D.C. 20036

American Council on Education, 1 Dupont Circle, Washington, D.C. 20036

American Council of Life Insurance, 277 Park Ave., New York, New York 10017

American Institute of Cooperation, 1129 20th St., N.W., Washington, D.C. 20036

American Stock Exchange, 86 Trinity Pl., New York, New York 10006

Anchor Books, Anchor Press/Doubleday, Garden City, New York 11530

Approach 13-30 Corp., 1005 Maryville Pike, Knoxville, Tennessee 37920

Argus Communications, 7440 Natchez Ave., Niles, Illinois 60648

Avon Books, 959 Eighth Ave., New York, New York 10019

Barron's Educational Series, Inc., 113 Crossways Park Dr., Woodbury, New York 11797

Berkley Medallion Books, 200 Madison Ave., New York, New York 10016

B'nai B'rith Vocational Service, 1640 Rhode Island Ave., N.W., Washington, D.C. 20036

Brooks/Cole Publishing Company, Subsidiary of Wadsworth Publishing Company, 555 Abrego St., Monterey, California 93940

Cahners Books, Inc., 221 Columbus Ave., Boston, Massachusetts 02116

Canfield Press, Div. of Harper & Row, 1700 Montgomery St., San Francisco, California 94111

Catalyst, 14 E. 60 St., New York, New York 10022

Chilton Book Company, 201 King of Prussia Rd., Radnor, Pennsylvania 19089

College Entrance Examination Board, 888 Seventh Ave., New York, New York 10019; order from College Board Publication Orders, Box 2815, Princeton, New Jersey 08541

College Placement Council, Inc., P.O. Box 2263, Bethlehem, Pennsylvania 18001

P.F. Collier, Inc., 866 Third Ave., New York, New York 10022

Consumer News Inc., 813 National Press Bldg., Washington, D.C. 20045

Consumer Reports, 256 Washington St., Mt. Vernon, New York 10550

Consumers Digest, 6136 N. Lincoln, Chicago, Illinois 60659

Consumers' Research Magazine, Washington, New Jersey 07882

Consumers Union of United States Inc., Educational Services Div., Mount Vernon, New York 10550

Cornell Institute for Research and Development in Occupational Education, Dept. of Education, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York 14850

Credit Union National Association, Inc., Dept. PR, Box 431, Madison, Wisconsin 53701

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Curriculum Innovations, Inc., 501 Lake Forest Ave., Highwood, Illinois 60040

Doubleday & Co., Inc., 245 Park Ave., New York, New York 10017

Dow Jones & Company, 2nd Ave., Chicopee, Massachusetts 01021

Dun & Bradstreet, Inc., 99 Church St., New York, New York 10007

E.P. Dutton & Co., Inc., 201 Park Ave. S., New York, New York 10003

Educational Research Corporation, 85 Main St., Watertown, Massachusetts 02172

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ETC Publications, P.O. Drawer 1627-A, Palm Springs, California 92262

Executive Enterprises Publications Co., Inc., 10 Columbus Circle, New York, New York 10019

Federal Reserve Bank of Boston, Bank and Public Information Center, Boston, Massachusetts 02106

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Federal Trade Commission, 6th St., & Pennsylvania Ave., N.W., Washington, D.C. 20580

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Finney Company, 3350 Gorham Ave., Minneapolis, Minnesota 55426

State of Florida, Department of Education, Tallahassee, Florida 32301

Follett Publishing Company, 1010 W. Washington Blvd., Chicago, Illinois 60607

Garrett Park Press, Garrett Park, Maryland 20766

General Learning Corporation, Division of Silver Burdett Co., 250 James St., Morristown, New Jersey 07960

General Motors Corporation, Public Relations Staff, Room 1-101, General Motors Building, Detroit, Michigan 48202

Ginn and Company, 191 Spring St., Lexington, Massachusetts 02173

Goodyear Publishing Company, 1640 5th St., Santa Monica, California 90401

Grosset & Dunlap Publishers, Inc., 51 Madison Ave., New York, New York 10010

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Human Resource Development Press, Box 863, Amherst, Massachusetts 01002

Impact Publishers, Inc., P.O. Box 1094, San Luis Obispo, California 93406

Institute of Life Insurance, 277 Park Ave., New York, New York 10017

Insurance Information Institute, 110 William St., New York, New York 10038

The Interstate Printers & Publishers, Inc., 19-27 N. Jackson St., Danville, Illinois 61832

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Mademoiselle, Box 3389, Grand Central Station, New York, New York 10017

Major Books, 21335 Roscoe Blvd., Canoga Park, California 91304

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Money Magazine, Time-Life Bldg., Rockefeller Center, New York, New York 10020

Monarch Press, Division of Simon & Schuster, 1 W. 39 St., New York, New York 10018

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National Association of Trade and Technical Schools (NATTS), 2021 L St., N.W., Washington, D.C. 20036

National Council for the Social Studies, 2030 M St., N.W., Suite 406, Washington, D.C. 20036

National Foundation for Consumer Credit, Inc., Federal Bar Bldg. West, 1819 H St., N.W., Washington, D.C. 20006

National Home Study Council, 1601 Eighteenth St., N.W., Washington, D.C. 20009

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Appendix C: Procedures for Performing a Classroom Item Analysis

Looking over your students' scores, you can find out how they stand generally on the kinds of skills and knowledge covered by the CSAP measures. But different questions (or items) measure different abilities and understandings in different skill areas within these career competency domains. Do the students in your class do well on items measuring one ability and poorly on items measuring another? Do they do well in locating and using information about educational and training opportunities but not so well in locating and using information about the world of work? Are they strong in basic concepts of banking but weak in knowledge about comparison shopping?

If you decide to have your CSAP response sheets centrally scored, you can find out how many students selected the preferred responses for each item and how many selected each alternative response by reviewing the Item Response Report and Skill Summary Report. However, those reports will not be available to you until several weeks after you submit the response sheets for scoring. You may decide you want item analysis data almost immediately after you have completed administering the exercises to assist in conducting subsequent discussions with your students. Here is what you can do:

Using a blank form like the form shown in Figure 11, write at the top of the sheet the name of the measure administered, grade, class, administration date, and the number of students in the class.

In columns 1 and 4 of the worksheet, list the numbers of the items, 1-60 or 70, for the particular measure you administered. In columns 2 and 5, list the preferred response for each item beside the number of the item. (Lists of preferred responses for each measure can be found in the tables on pages 71-76, or they can be copied from the answer sheet where they are enclosed in geometric symbols.) Label columns 3 and 6 "Number Choosing Preferred Response." These columns will be completed in class. If you are administering Employment-Seeking Skills, your worksheet will look like Figure 11, without columns 3 and 6 filled in.

When you are ready to begin tallying the students' responses, you might want to ask them to exchange answer sheets so that they will not have to report the results of their own performance.

For each exercise, tell students which choice is the preferred response and ask them to indicate by a show of hands how many agreed with this choice. It should take only a few minutes to record the number who gave the preferred response for the first 30 or 35 items. You can continue with the remaining items at a later time.

Ask the students to return the response sheets to their owners. Have the exercise booklets redistributed to the class while you scan column 3 of the worksheet to see which items seemed to be particularly troublesome for the students. Circle as many of those exercises as you feel can be discussed in the time available. (In column 3 of Figure 11, the teacher circled for discussion all exercises for which less than half—or less than 15—of the students in the class selected the preferred responses.)

Suggestions for conducting follow-up discussions can be found in **Administering the Career Skills Assessment Program: Instructions for Using CSAP Measures.**

Figure 11. Class Item Analysis

CSAP MEASURE EMPLOYMENT-SEEKING SKILLS GRADE 11 CLASS II

TEACHER ADAM BOWEN DATE ADMINISTERED 11/8/77 NUMBER OF STUDENTS 30

(1) Item	(2) Preferred Response	(3) Number Choosing Preferred Response	(4) Item	(5) Preferred Response	(6) Number Choosing Preferred Response
1	A	27	36	B	15
2	B	15	37	A	18
3	A	(14)	38	C	15
4	D	18	39	A	17
5	C	24	40	C	16
6	C	27	41	B	17
7	D	17	42	D	19
8	C	19	43	C	(12)
9	C	23	44	A	18
10	D	(12)	45	C	(9)
11	C	(11)	46	D	(5)
12	A	21	47	B	(12)
13	B	21	48	A	16
14	C	(11)	49	A	16
15	A	15	50	B	(12)
16	B	21	51	B	21
17	D	(7)	52	C	25
18	D	21	53	B	(9)
19	B	16	54	C	15
20	A	(14)	55	A	16
21	C	(12)	56	D	(14)
22	C	(6)	57	B	(6)
23	D	17	58	A	(8)
24	B	(12)	59	B	(7)
25	A	16	60	D	(5)
26	B	15	61	C	(14)
27	C	(13)	62	B	16
28	D	21	63	D	18
29	B	18	64	D	19
30	B	15	65	A	15
31	D	(9)	66	A	(14)
32	C	(11)	67	C	(6)
33	D	(12)	68	C	17
34	C	(7)	69	D	19
35	B	(13)	70	D	(4)

Appendix D: Constructing Local Norms

The procedures outlined below and illustrated in Figure 12, a sample computation sheet, are generally used in constructing local norms. More detailed information may be found in many standard elementary statistics textbooks.

The first step is to prepare a frequency distribution, which is simply a list of raw scores and the number of students getting each score. This step has been done for you if you have the CSAP Frequency Distribution Report.

1. Find the highest score and the lowest score.
2. In column 1, list the scores from highest to lowest.
3. In column 2, tally the number of students earning each score.
4. Count the tallies for each score and record these numbers (frequencies) in column 3.

The second step is to compute percentile ranks. Percentile ranks are based on cumulative frequencies. These are obtained by adding the frequencies from the bottom up so that the number opposite each score equals the sum of the frequency for that score and all the frequencies below it. Put these figures in column 4. The number opposite the top score should equal the total number of students in the group.

To find the percentile rank for a given score:

1. Find one-half of the frequency for that score.
2. Add that number to the cumulative frequency for the score just below the one in question.
3. Divide that sum by the total number of students in the norms group.
4. Multiply that quotient by 100.

The product is the percentile rank and is entered in column 5.

For a score of 43 in the sample illustrated in Figure 12, the following computations were made:

1. $\frac{1}{2} \times 6 = 3$
2. $140 + 3 = 143$
3. $143 \div 207 = .69$
4. $.69 \times 100 = 69$

The percentile rank of 69 is recorded in column 5 of the example.

Percentile ranks higher than 99.5 and lower than 0.5 may be recorded as 99+ and 1−, respectively. Otherwise, the figure may be rounded to the nearest whole number.

Figure 12. Local Norms Computation Form

NAME OF MEASURE: CAREER ATTITUDE MATURITY SCALE SCHOOL: LINCOLN SENIOR HIGH

ADMINISTRATION DATE: OCTOBER 1978 GRADE: 11

Score	Tally	Frequency	Cumulative Frequency	Percentile Rank
58	II	2	207	99
57	I	1	205	99
56	IIII	4	204	98
55	III	3	200	96
54	IIII	4	197	94
53	𝍸	5	193	92
52	II	2	188	90
51	𝍸 II	7	186	88
50	IIII	4	179	86
49	𝍸 I	6	175	83
48	𝍸	5	169	80
47	III	3	164	78
46	I	1	161	78
45	III	3	160	77
44	𝍸 𝍸 II	11	157	73
43	𝍸 I	6	146	69
42	𝍸 III	8	140	66
41	𝍸 IIII	9	132	62
40	𝍸 𝍸 III	13	123	56
39	𝍸 III	8	110	51
38	𝍸 𝍸	10	102	47
37	𝍸 𝍸 I	11	92	42
36	𝍸 II	7	81	37
35	𝍸 IIII	9	74	34
34	IIII	4	65	30
33	𝍸 I	6	61	28
32	𝍸	5	55	25
31	𝍸 III	8	50	22
30	𝍸	3	42	19
29	𝍸 I	6	37	16
28	𝍸 I	6	31	14
27	II	2	25	12
26	𝍸 II	7	23	9
25	𝍸	5	16	7
24	I	1	11	5
23	IIII	4	10	4
22	I	1	6	3
21	II	2	5	2
20	I	1	3	1
19	I	1	2	1
18			1	1
17			1	1
16	I	1	1	1

TOTAL NUMBER OF STUDENTS: 207

Appendix E: Identifying Levels of Expected Performance*

"How high is high?" "How much is enough?" "What standards should be used?" Questions like these are bound to arise in interpretation and use of results of the CSAP.

Brown (1976) notes a common failure to distinguish clearly between measurement and evaluation:

> "Measurement answers the question: how much? That is, measurement provides a description of a person's performance; it says nothing about the worth or value of the performance. However, when we interpret a person's performance, we usually place some value or worth on it. At this point we are going beyond description. We are attempting to answer the question: how good? This is evaluation."

The CSAP has not established mastery-level standards for criterion-referenced interpretation of its results. Schools and colleges vary in the goals they establish for their career development programs. Interpretation of CSAP results must take into account what is reasonable to expect from a group of students who have been exposed to a specific set of learning experiences. Therefore, each user must decide what performance level to accept as mastery in the light of his or her organization's objectives and the particular experiences and attributes of the group being assessed. And each user must decide whether having an established mastery level will help students and faculty to set goals and measure progress.

A decision to establish a minimum competency or mastery level should be based on consideration of several factors: (1) a careful comparative analysis of the relationship between the local career development program objectives and the content coverage of the items in a given CSAP content area; (2) the varying reliability of individual and group scores and, hence, the differing degrees of significance that can be attached to interpretation of various scores; (3) clear recognition that the items in the various CSAP measures sample career competencies rather than provide a comprehensive assessment of all aspects of career development; and (4) recognition that the difficulty level of each item varies not only as a function of its content but also as a function of its vocabulary and reading difficulty.

*Much of the material presented in this section is adapted from **Manual for Setting Standards on the Basic Skills Assessment Tests** by Michael Zieky and Samuel Livingston. Princeton, N.J.: Educational Testing Service, 1977.

Definition of a "Standard"

Standards for the performance of students on measures of career skills are expressed in the form of scores. A "mastery level score," a "minimum competence score," or a "passing score" are other names for such standards. For example, the Career Decision-Making Skills measure has 60 questions. It might be decided that a student has mastered the objectives it assesses if the student answers correctly 36 of the 60 questions. If such a decision is made, a standard for mastery has been set.

Social and Political Issues Related to Standards-Setting

The setting of standards on measures of career skills or other tests of educational achievement is as much a social and political process as it is a psychometric one. Even if highly sophisticated statistical procedures are performed flawlessly, the standards-setting processing will be deficient unless the issues discussed below are considered:

1. **Standards Should Be Viewed as Commitments.** There is no reason to set a standard unless preparation has been made to allocate resources to help those students whose scores fall below the standard. The purpose of setting a standard is to aid in the identification of those students who are most in need of remedial help. The standard should never be used to attach a punitive label to a student.

2. **Standards Should Be Viewed as Minimums.** Although standards may be set for a variety of purposes, including identification of a high-performing or honors group for enrichment or advanced placement, it is assumed that CSAP users are more likely to be concerned with minimum competency. It must be made clear to all concerned (students, parents, teachers, counselors, administrators, school board members) that the standards are set to define the **minimal** acceptable levels of performance. No one should be satisfied merely to demonstrate that "most students are meeting the standards." Many students should be performing well above minimally acceptable levels. The standard must remain a floor under performance. It should never take on the aspect of a ceiling over performance.

3. **Standards Should Be Viewed as the Results of a Process.** The process used to set standards will have a great impact on the acceptability of the standards that are set. The judges used to help set standards should include representatives of both sexes as well as of various racial, ethnic, and cultural backgrounds. In addition, representatives of such interested groups as parent-teacher associations, school

boards, counselor educators, and local business organizations and employer groups should be included. If students from more than one school are involved in administration of CSAP measures, staff from each school should be involved in setting standards.

4. **Standards Should Be Viewed as Tentative Estimates.** Standards should be reviewed at least annually. It is unlikely that an organization's first attempts at setting standards will work as well as subsequent attempts. The experience gained in the first attempt should help to improve later attempts. In any case, the career development needs and expectations of a school, school district, or community college are likely to change over time, thus requiring modification of standards.

5. **Standards Should Be Realistic Estimates.** Before setting a standard by any of the methods described in this section, data should be gathered that will help set realistic standards. A representative sample of students might be interviewed to determine the percentage who believe they will have difficulty finding work or continuing their education because of problems in basic skills or inappropriate guidance experiences. School records can help determine the proportion of graduates and dropouts who are neither employed nor attending postsecondary school. A sample of parents might be interviewed to determine the percentage who believe their children will have future employment difficulties because they lack basic career skills. The measures could be administered to a group acknowledged to have mastered the relevant skills and knowledge (masters), and to a group known to have difficulty with such skills and knowledge (nonmasters) to obtain comparative score information.

6. **Standards Should Not Be Overgeneralized.** The results of the application of standards should not under ordinary circumstances be used to measure teacher effectiveness or evaluate counselor performance. Too many variables other than staff effectiveness affect student performance to allow such use of assessment data in other than controlled, experimental settings.

7. **Standards Setting Should Not Be Hurried.** Setting standards is a difficult task. The person given responsibility for that task will need time to plan and carry out the work. In addition, meeting space must be made available, computational support may be necessary, and some of the judges may require compensation for their time.

After reading this section and selecting the method(s) you are going to use to set standards, it is a good idea to try a pilot standards-setting with a small number of judges and/or a small sample of students. Such a process should help polish your skills and increase the chances that the full-scale standards-setting will run smoothly.

Procedures for Setting Standards

In the technique of standards-setting, there is a large gap between theory and practice. In the branch of mathematics called decision theory, mathematicians have developed elaborate solutions to the problem of setting standards. While these solutions are theoretically sound, they are not used very often—probably because they require data that are hard to get. The method with the **least** theoretical justification is the one most often used in practice: the arbitrary choice of a fixed percent-correct as the standard, without regard to the length, difficulty, or importance of the measure.

Fortunately, some methods have theoretical justification and yet do not require too much hard-to-get data. These methods can be applied without specialized training, and the calculations they require are not difficult. Two such methods are described in the following pages.

All methods of setting standards require some kind of subjective judgments. The two methods described here are based on judgments of the questions in a measure.

It is a good idea to apply more than one method to the same measure. Because the standards set by different methods are not likely to be exactly the same, it is appropriate to consider using the average of two or more methods to arrive at a final single standard.

The two methods described here are based on judgments of what certain types of students **should** be able to do. These judgments are made in terms of the specific content of the measure, one question at a time. Judgments about the individual questions are then combined to produce a standard for the full measure. Both methods consist of four basic steps:

1. Selecting judges
2. Defining minimally acceptable performances
3. Collecting judgments
4. Combining the judgments to set a standard

Step 1: Selecting Judges. The judges should be a group of persons who are qualified to decide what the students should be able to do. Counselors and instructors at the appropriate educational levels are obvious choices, but people in the local community, such as employers, school board members, and community representatives might also be considered. You should use at least five judges, and more if possible. However, because the process becomes cumbersome with too many judges, 30 people would be a reasonable upper limit.

Step 2: Defining Minimally Acceptable Performance. A decision must be made, either by the judges or a staff committee, as to what minimally acceptable performance on the CSAP measure means for your school, school district, or college. For example, the Personal Economics Skills measure assesses practical money management tasks of everyday life, such as understanding personal banking procedures, purchasing goods and services, and paying bills, borrowing and using credit, and so forth. The judges should be asked to read the outline of specifications for the given measure. They should then be asked to describe, in their own words, the **lowest level of performance they would consider acceptable** on what is measured by the exercises. The judges may find it convenient to describe the performance of specific

students they have worked with. Discussion should be encouraged. Questions such as the following should be asked: "Should minimally acceptable performance require the students to be able to distinguish different types of banking services? Should it require students to know how to fill out personal checks properly? Should the students be able to compute the additional cost of an installment purchase over the cash price?"

Be prepared to spend two or three hours reaching and explaining a definition of minimally acceptable performance for your students.

Steps 3 and 4: Collecting and Combining the Judgments. Once the judges have been selected and a discussion has taken place on minimally acceptable performance, collection and combination of the judgments can proceed. Two variations of the judgment process are presented here. The methods are usually identified by the names of the authors who first suggested them in published writings: (1) Robert L. Ebel (1972) and (2) William H. Angoff (1971).

The Ebel Method

A detailed item-by-item evaluation of the questions in any one of the CSAP measures can provide a basis for determining a minimally acceptable performance level for a given group of students. The method suggested here calls for (1) judging how difficult each item would be for a minimally competent student and (2) determining the percent correct expected of such a student of all the items in that category of item difficulty.

The first step in this method is to ask each judge to rate on the following five-point scale the difficulty of each item on the CSAP measure for a student just barely achieving a level of minimally acceptable performance:

Difficulty	Description
A	Very Difficult
B	Difficult
C	Middle Difficulty
D	Easy
E	Very Easy

Each item is given an A to E rating; an A is assigned to the item if the minimally competent student would find the item very difficult, an E if such a student would find the item very easy.

A form like the one in Figure 13 may be used by the judges to tabulate their ratings.

The second step is to assign to each of the difficulty classification ratings an "item difficulty index." This index is an estimate of the percent of a group of minimally competent students who would answer that category of questions correctly. It is essential that it be clearly understood that it is the performance of a **group of students at the minimally acceptable level** that is being estimated, and **not the performance of a typical group of students.**

Each judge makes an independent estimate of the percent of the group of minimally competent students who would answer each category of questions. In arriving at the estimate, the judge should bear in mind that a certain number of students who do not know which alternative is correct will answer correctly by guessing. This number is 25 percent for four-choice items. But the percentage sometimes is less in the presence of attractive wrong alternatives, or if the item is omitted by some students. Two commonly used sets of item difficulty index values are presented below:

Difficulty	Description	Percent of minimally competent students expected to answer the questions correctly	
		Set I	Set II
A	Very Difficult	10%	15%
B	Difficult	25%	35%
C	Middle Difficulty	50%	50%
D	Easy	75%	65%
E	Very Easy	90%	85%

After each judge has classified all the items, the estimated minimum competency score may be determined by multiplying the number of items in each difficulty classification by the appropriate percentage. The panel at the bottom right of the illustrated Judge's Rating Form will facilitate completion of the several computations.

The following example illustrates the procedure:

Difficulty Classification	Number of Items		Percent Correct	Estimated Score
A	10	×	10	1.00
B	15	×	25	3.75
C	13	×	50	6.50
D	12	×	75	9.00
E	10	×	90	9.00
Total	60		Minimum Competency Score	29.25

Using this calculation, the estimated minimum competency score would be 29. The estimated minimum competency scores derived by the group of judges are averaged, and that result may be used as the estimated minimum competency score for the given CSAP measure.

Several refinements to this procedure are worth considering. First, if the judges classify the items independently, they may then be convened as a panel to discuss their ratings and to arrive at a group consensus on the classification of each item. A recomputation of each judge's estimated minimum competency score might follow the discussion.

Second, the classification of items into difficulty levels might be made with knowledge of the student group's actual performance on the items. The success of the method previously described hinges on the ability of the judges to empathize with the minimally competent student and to estimate the percent of such students that will answer each category of question correctly. One might also use available empirical data on item performance where the data are available.

The Skill Summary Report presents the percentage of students in a designated reporting group that answered each question correctly. Such statistics could be used in helping inform the judgments that

Figure 13. Judges' Rating Form—Ebel Method

PLEASE PRINT

Judge's Name: _____

CSAP Measure Being Rated: _____

_____

Rating of Question for Hypothetical Student Just Barely Achieving a Level of Minimally Acceptable Performance

Question	A Very Difficult	B Difficult	C Middle Difficulty	D Easy	E Very Easy
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
31.					

Difficulty	Description	Percent of Minimally Competent Students Expected to Answer the Question Correctly
A	Very Difficult	10 or _____
B	Difficult	25 or _____
C	Middle Difficulty	50 or _____
D	Easy	75 or _____
E	Very Easy	90 or _____

Question	A Very Difficult	B Difficult	C Middle Difficulty	D Easy	E Very Easy
32.					
33.					
34.					
35.					
36.					
37.					
38.					
39.					
40.					
41.					
42.					
43.					
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59.					
60.					
61.					
62.					
63.					
64.					
65.					
66.					
67.					
68.					
69.					
70.					
Sums					

Classification	Number of Items		Percent Correct		Estimated Score
A	_____	×	_____	=	_____
B	_____	×	_____	=	_____
C	_____	×	_____	=	_____
D	_____	×	_____	=	_____
E	_____	×	_____	=	_____
Total: _____			Minimum Competency Score:		_____

are made in identifying which items belong in which categories. An interesting procedure is to have the judges complete the rating form first without access to actual item data and then to repeat the rating process with item data at hand, finally comparing the results of the uninformed and informed judgments.

The Angoff Method

In Angoff's method, the standard is computed from a table of probabilities derived from judges' estimates. The judges are asked to estimate the probability that a minimally competent student would answer a given question correctly. The judgments are then collected by the following procedure:

1. Give each judge a copy of the exercise booklet for the CSAP content area being rated. Have the judges meet together as a group, look at the first question, and **state the probability that a minimally competent student would answer the question correctly.** This task may require some time to explain. If the judges are not comfortable dealing with probabilities, ask them to think of a group of 100 minimally competent students and state how many of those students would be expected to answer the question correctly. Obviously, the easier the question, the higher the probability will be. The probability must be between .00 and 1.00. The probability should never be lower than the chance of guessing the correct answer by blind luck; for a four-choice item, this probability is .25.

2. Have each judge write his or her estimated probability on a copy of the exercise booklet, next to the question. After the probabilities have been estimated independently, have the judges announce their choices of a probability for each item and write these numbers on a blackboard or a large sheet of paper so that all the judges can see them. Then ask the judges who stated the largest and smallest numbers to explain the reasons for their choices. Then tell the judges they may change their choices if they want, but not to announce the changes. Instead, they should simply write their revised probabilities on their exercise booklets and cross out their earlier entries.

Repeat this procedure for each question in the exercise booklet.

3. Collect the exercise booklets and record the judges' probability estimates in a table like the one presented below.

Question	Judges					Average
	V	W	X	Y	Z	
1	.80	.70	.80	.90	1.00	.84
2	.60	.50	.50	.60	.50	.54
3	.20	.40	.50	.35	.30	.35
4	.30	.40	.60	.30	.20	.36

4. Average the probabilities for each question by adding up the numbers in the row and dividing by the number of judges who stated a probability for that question.

5. Add up the averages for all the questions. The resulting number is the standard for the measure. In the above example, the standard would be .84 + .54 + .35 + .36 = 2.09. Therefore, a score of 3 on this four-question test would be above the standard; a score of 2 would be below the standard.

A somewhat more complicated and time-consuming method based on judgment of questions was presented by Leo Nedelsky in a 1954 article, "Absolute Grading Standards for Objective Tests." **Educational and Psychological Measurement,** Vol. 14, pp. 3-19. Nedelsky's method requires judges to identify for each item those distractors that a minimally competent student should be able to eliminate. Other methods based on the actual performance of different groups of students have been prepared. Information about such empirical methods may be found in the **Manual for Setting Standards on the Basic Skills Assessment Tests** by Michael Zieky and Samuel Livingston. Princeton, N.J.: Educational Testing Service, 1977.

Figure 14. Establishing a Gray Area

Establishing a Gray Area

Once a mininum competency score or level has been determined, it is desirable and appropriate to establish a "gray area," that is a region of uncertainty for scores very close to the minimum competency level. Reflecting the error that is a part of all test scores, such a gray area, or band, will provide a constant reminder to those who use the results that a student whose actual skills are just above the minimum competency score level could, simply through some chance error, receive a score below the minimum competency level.

One way to arrive at such a gray area is to establish a range of scores on either side of the minimum competency score within which some fraction, say two-thirds, of the erroneous scores would fall. Scores in this gray area would be considered neither above nor below the minimum level.

The standard error of measurement can be used to estimate a band of this size. If an estimated minimum competency score were 32 and the standard error of measurement were 3, a two-thirds error band would extend from a score of 29 to a score of 35.

Another way to establish such a gray area is by using the raw score bands presented in the Profile Report included with the CSAP summary reports. If a vertical line identifying the minimum competency score is drawn on the bar graph, as illustrated in Figure 14, such a line will fall through some of the raw score bands. Each student's raw score band is defined as his or her obtained score ± the standard error of measurement. Bands falling **above or on** the minimum competency score line are considered above the line. Only bands falling **completely** below the minimum competency score line should be regarded as below minimum competency.

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Glossary

This glossary is not in alphabetical order, because some terms can be more conveniently explained after others. An alphabetical list of the terms defined follows; the numbers represent the order in which the definitions appear.

Biserial correlation coefficient, 22
Correlation, 5
Correlation coefficient, 6
Criterion, 13
Cumulative frequency, 16
Frequency distribution, 15
Mean or arithmetic mean, 2
Median, 3
Norms, 14
Obtained score, 8
Percentile band, 18
Percentile rank, 17
Quartile points, 21
Raw score, 1
Raw score band, 20
Reliability, 9
Sample, 12
Standard deviation, 4
Standard error of measurement, 10
Stanine, 19
True score, 7
Validity, 11

1. **Raw score.** The number of correct responses; the score as originally obtained, before any statistical treatment.

2. **Mean or arithmetic mean.** The average obtained by adding all the scores of a group and dividing the sum by the number of separate quantities.

3. **Median.** The score below which 50 percent of the cases in a score distribution fall. If the shape of the distribution is distorted by the presence of a few aberrant cases of little importance, the median may be a better summary description of the group than the mean. If the distribution of scores is nearly symmetric, the median and mean will be almost identical.

4. **Standard deviation.** A measure of the spread or extent of variability of a set of scores around their mean. The standard deviation reflects the degree of homogeneity of the group with respect to the measure in question. That is, the less the dispersion of scores, the smaller will be the standard deviation.

5. **Correlation.** The extent to which two measures or variables, such as height and weight, vary together or are related for individuals in a group. If, as in the case of height and weight, people who are high on one variable (tall) tend to be high on the other (heavy), the correlation is said to be positive. As another example, months of practice and golf scores would have negative correlation; for, ordinarily, as the first variable is high (practice increases), the second tends to be low (score decreases). Correlation does not imply causation but only association.

6. **Correlation coefficient.** The customary index for expressing the degree of relationship observed between two sets of measures for the same group. The coefficient can range from −1.00, showing perfect negative correlation, through zero, indicating no correlation, to +1.00, showing perfect positive correlation.

If, for example, the correlation coefficient between height and weight for a group of men were +1.00, knowing a man's height, one could estimate his weight without error. But, if the correlation coefficient between height and weight were zero, one could not estimate a man's weight, knowing his height, any more accurately than not knowing it.

Most correlation coefficients of test scores and measures of academic success fall somewhere between 0 and +1.00. Knowledge of an individual's score on one variable enables one to predict that person's standing on the other variable imperfectly but with greater accuracy than if the correlation were zero. The higher the coefficient, the less error likely in prediction.

7. **True score.** A hypothetical concept indicating what an individual's score on a test or measure would be if there were no error inherent in the measuring process. It may be thought of as the hypothetical average of an infinite number of observed scores with the effect of practice removed.

8. **Obtained score.** The score actually achieved by a person completing a measure. It is considered to be the sum of the individual's true score plus the error introduced by the imperfect reliability of the measure. This error can be either positive or negative so that an obtained score can be higher or lower than the true score. Same as **raw score.**

9. **Reliability.** The extent to which a test or other measurement instrument measures consistently; that is, the extent to which a person repeating the measure or taking an alternate form would tend to get the same score, assuming that practice makes no difference. Reliability is usually expressed as a correlation coefficient and is comparable, roughly, to the correlation between two perfectly parallel test forms.

The concept of reliability can be illustrated as follows. Imagine two yardsticks, one made of wood and the other of a tape that is subject to stretching. Obviously, the wooden yardstick will be more reliable because it will give more consistent results if an object is measured with it repeatedly. Some error is introduced into all measurements, whether educational tests or machine shop measurements, by the imperfect reliability of the measuring instrument.

10. **Standard error of measurement.** An indication of the probable extent of the error inherent in an obtained score because of the imperfect reliability of a test or similar measure. That is, it indicates the probable range of discrepancy between the true score and the obtained score. It is expressed in score units of the test. Intervals extending one standard error above or

below the true score will include 68 percent of an individual's observed scores. Similarly, intervals extending two standard errors above and below the true score will include 95 percent of the individual's observed scores.

11. **Validity.** An indication of the extent to which a test or other measure does the job for which it was intended. There are several kinds of validity. Content validity may be thought of as the extent to which a given measure accurately represents, or samples, the content of a particular subject-matter area. Content validity is of particular importance in achievement measures for use in career education.

Construct validity involves the degree to which an instrument measures the theoretical concept or "construct" used to describe some aspect of human behavior. Such validity is based on a combination of logical and empirical evidence of the relationship between the measure and a related theory. Construct validity is concerned with the psychological meaningfulness of a measure.

Criterion-related validity is the extent to which scores on a particular measure can estimate some criterion variable. Criterion-related validity for measures in the area of career development is difficult to establish because of the lack of adequate criterion variables. Criterion-related validity is usually expressed as a correlation coefficient between the predictor variable (test score) and the criterion variable (such as a performance rating).

12. **Sample.** A subgroup of a population; part of a total universe chosen for investigation. In a statistical investigation it may be impossible or impractical to take measurements on all individuals in the population. One practical solution to this problem is to take measurements on a random sample and, from the results, infer general characteristics or principles that apply to the population as a whole. Users of CSAP summary reports should exercise special care to define or describe the sample on which the scores are based if the sample was not a random selection.

Sampling is also used in construction of tests and similar measures. Because it is impossible to build a measure that assesses all aspects of knowledge or skill in any one content area, the measurement specialist compromises by sampling from that universe of knowledge and skill to produce a measure that is representative of the content area and can be administered within a reasonable time limit.

13. **Criterion.** That which a test is supposed to measure or predict; a variable being estimated or predicted from another variable (or variables). Sometimes called the dependent variable.

14. **Norms.** A statistical description of the performance on a test or measure of a well-defined group that serves as a reference with which to gauge the performance of other individuals who complete the measure. Most norms tables show in descending order various test scores and the percentage of people in the reference group who scored below each score level. Thus, knowing an individual's score, one can quickly determine how he or she compares with the reference group.

The CSAP does not provide national norms, because a national reference group is of limited value as a basis for interpreting performance in the area of career development. Schools nationally vary considerably in the degree to which they emphasize mastery of career skills and knowledge. The most appropriate reference group for understanding an individual's career development is the group he or she most resembles educationally and demographically. Instructions for development of local norms are presented on pages 97-98 of this book.

15. **Frequency distribution.** A tabulation of scores from high to low, or low to high, showing the number of individuals who obtain each score or whose scores fall in each score interval. Frequency distributions are used to determine tables of percentile ranks.

16. **Cumulative frequency.** The sum of all scores at and below a given score or score interval. Cumulative frequencies are computed by successively adding simple frequencies.

17. **Percentile rank.** The sum of scores below a particular score plus one-half of the number of scores at a particular score level expressed as a percentage of all scores.

18. **Percentile band.** A range of percentile ranks (sometimes referred to as a confidence interval) within which a person's true score probably falls. The standard error of measurement is added to the student's obtained score to establish the upper limit of the range, and the same value is subtracted from the obtained score to establish the lower limit of the range. The percentile band represents the conversion of these limits into percentile form.

19. **Stanine.** A one-digit standard score used in making gross score interpretations. Stanines divide a normal distribution of scores into nine segments. The stanine scale ranges from a low of 1 to a high score of 9, with 5 representing the average performance of students in the group. The standard deviation of stanine in a normal distribution is approximately 2.

20. **Raw score band.** An interval within which a person's true score probably falls. The standard error of measurement (in raw score units) is added to the student's obtained score to establish the upper limit of the interval, and the same value is subtracted from the obtained score to establish the lower limit. Two-thirds of the many scores the person could make by taking a large number of parallel forms of the test would probably fall within this range, and it is reasonable to assume that the person's true score would be in that group.

Raw score bands are used in the CSAP Profile Report to facilitate establishment of a level of expected performance and interpretation of scores that fall at or near that level.

21. **Quartile points.** Quartile points separate a distribution of scores into four groups of equal size. Quartile points are obtained by counting up from the bottom of a frequency distribution of scores. One-fourth of the way up from the lowest score to the highest score is called the first quartile. The second quar-

tile is the middle score or median. The third quartile is three-fourths of the way up. Quartiles may be expressed as the 25th, 50th, and 75th percentiles. In the CSAP, quartile data are presented at the bottom of the Frequency Distribution Report.

22. **Biserial correlation coefficient** (referred to as r_{bis} or r-biserial). A type of correlation coefficient used in test construction that relates performance on a given question and performance on the total test of which the item is a part. It is an index of discrimination measuring the extent to which persons who score high on the total measure tend to get the question right and those who score low tend to get it wrong.

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Lucy Laney High School
Augusta

Cedartown High School
Cedartown

Crisp High School
Cordele

Newton County Comprehensive High School
Covington

Dalton High School
Dalton

Coffee County High School
Douglas

Wayne County High School
Jesup

Troup High School
La Grange

Louisville High School
Louisville

Telfair County High School
McRae

Wadley High School
Wadley

Ware County Senior High School
Waycross

Etowah High School
Woodstock

Wrens High School
Wrens

MARYLAND

Walbrook Senior High School
Baltimore

Clearspring High School
Clearspring

Hancock High School
Hancock

DuVal High School
Lanham

Mardela High School
Mardela Springs

Friendly High School
Oxon Hill

James M. Bennett High School
Salisbury

Parkside High School
Salisbury

Wicomico High School
Salisbury

Suitland Senior High School
Suitland

Largo Senior High School
Upper Marlboro

MINNESOTA

Audubon High School
Audubon

Breckenridge High School
Breckenridge

Rocori High School
Cold Springs

Coon Rapids High School
Coon Rapids

Memorial Senior High School
Ely

Holdingford High School
Holdingford

Hutchinson Senior High School
Hutchinson

Le Center High School
Le Center

Central High School
Minneapolis

Southwest Secondary
Minneapolis

New Ulm Senior High School
New Ulm

Osseo Senior High School
Osseo

Pelican Rapids High School
Pelican Rapids

Perham High School
Perham

Independent School District 256
Redwing

Richfield High School
Richfield

Rosemount Senior High School
Rosemount

St. Peter's High School
St. Peter

White Bear Senior High School
White Bear Lake

Willmar High School
Willmar

NEW JERSEY

Central Regional High School
Bayville

Chatham Township High School
Chatham

East Brunswick High School
East Brunswick

Battin High School
Elizabeth

Thomas Jefferson High School
Elizabeth

Dwight Morrow High School
Englewood

Hunterdon Central High School
Flemington

Hackettstown High School
Hackettstown

Leonia High School
Leonia

Manasquan High School
Manasquan

Cedar Ridge High School
Matawan

South Brunswick High School
Monmouth Junction

Ocean City High School
Ocean City

Madison Township High School
Old Bridge

Orange High School
Orange

Parsippany-Troy Hills High School
Parsippany

Hopewell Valley Central High School
Pennington

Ramsey High School
Ramsey

Morris Knolls High School
Rockaway

Montgomery High School
Skillman

Sterling High School
Somerdale

Wayne Hills High School
Wayne

Wayne Valley High School
Wayne

Shore Regional High School
West Long Branch

West Milford Township High School
West Milford

OHIO

Fort Frye High School
Beverly

Carlisle Local Schools
Carlisle

Aiken Senior High School
Cincinnati

Walnut Hills High School
Cincinnati

Canterbury School
Cleveland Heights

North High School
Columbus

Dayton City Schools
Dayton

Defiance Senior High School
Defiance

North High School
Eastlake

Westland High School
Galloway

Geneva High School
Geneva

Trimble Local High School
Gloucester

Grove City High School
Grove City

Westland High School
Grove City

Miller High School
Hemlock

Hilliard High School
Hilliard

Malabar High School
Mansfield

Mansfield Senior High School
Mansfield

Washington County Joint Vocational School
Marietta

Nelsonville-York Senior High School
Nelsonville

New Lexington High School
New Lexington

Frontier High School
New Matamoras

Orrville High School
Orrville

Valley Forge Senior High School
Parma Heights

Greenon High School
Springfield

Mad River-Green Local Schools
Springfield

North High School
Springfield

Federal Hocking High School
Stewart

Stow Senior High School
Stow

Calvin M. Woodward High School
Toledo

DeVilbiss High School
Toledo

Rogers High School
Toledo

Warren High School
Vincent

Reserve High School
Warren

Waterford High School
Waterford

Willoughby-Eastlake City Schools
Willowick

Boardman Local Schools
Youngstown

The College Board program staff invites suggestions and comments from counselors, teachers, administrators, and other educational users about the program and its publications.

Correspondence should be directed to:
Program Service Officer
Career Skills Assessment Program
The College Board
888 Seventh Avenue
New York, NY 10019

Telephone inquiries may be directed to:
(212) 582-6210

How to Obtain Career Skills Assessment Program Materials

All orders should be directed to:

Career Skills Assessment Program
Box 2839
Princeton, New Jersey 08541

Purchasers are urged to indicate the date needed on all orders and to allow at least four weeks for delivery after receipt of order. Materials will be shipped by the most economical means when time allows. If time is short, orders will be expedited as necessary to meet the required date, and appropriate shipping charges will be added to the invoice.

To assure prompt and accurate filling of orders, the following information must be included on them: the official purchase order number, complete shipping address, complete billing address, institution codes (when available), specific materials wanted, and quantity of each item in units specified. If you would like the convenience of having orders shipped to individual institutions, be sure that complete instructions, including quantities and institution codes, accompany your order.

Scoring may be ordered with materials or when response sheets are mailed.

If an order is placed by telephone or telegram, the subsequent official confirming order must be marked "confirming" to avoid duplicate shipments. Telephone orders will be processed but will **not** be shipped until the customer's confirming order is received.

Orders are billed at the time of shipment. Invoices are not rendered for back-ordered items. Please indicate on the order form if your billing address is different from your shipping address.

Prices and Discount Policy

The following prices supersede all previous lists and announcements, and they are subject to change without notice. Professional discounts are included in the prices shown.

Item	Price
Exercise booklets (reusable)—package of 25	$25.00 per content area
Self-instructional **guides** and response sheets—package of 25 of each	$25.00 per content area
Scoring and Summary Reports — 75 cents per response sheet (minimum order: 75 response sheets per content area)	$56.25 minimum
Implementing the Career Skills Assessment Program	$ 2.75 each
Sound Filmstrip Kit	$48.50 each
Sample Set — includes one each of all printed materials in the Career Skills Assessment Program (must be prepaid if ordered alone)	$ 5.00 each

Discounts

The following discount schedule applies to single orders, in quantity, even if the order is broken into several shipments to different locations.

Exercise Booklets and Response Sheets and Guides

1-24 packages	No discount
25-199 packages	10 percent discount
200 or more packages	15 percent discount

Scoring and Reporting Services

Minimum scoring charge	$56.25
100-24,999 response sheets	No discount
25,000 or more response sheets	10 percent discount

Discounts apply to the total number of packages ordered at any one time. Packages of exercise booklets or **guides** and response sheets for more than one content area may be combined for a higher discount. All other items listed are sold at prices shown, regardless of quantity.

All shipments are FOB, Ewing Township, Trenton, New Jersey 08618. Charges will be prepaid and added to the invoice. Foreign shipments must be paid for in United States funds or by International Money Order. Account terms are 30 days net. Checks or money orders should be made payable to Career Skills Assessment Program.

Return Policy

1. Permission to return materials must be obtained from the CSAP Program Director at Educational Testing Service, Princeton, N.J. 08541 (609) 921-9000.

2. Exercise booklets, **guides,** and response sheets will be accepted for credit when returned in unopened packages within three months of the date of purchase, with a 25 percent handling charge.

3. **Guides** and response sheets, which are always distributed in equal quantities, will be accepted for return only if each unopened package of **guides** returned for credit is accompanied by an unopened package of response sheets for the same instrument.

4. Each return must be accompanied by a copy of the original invoice, or by the packing slip showing the invoice number and purchase date.

5. Materials that have been discounted, Sample Sets, copies of **Implementing the Career Skills Assessment Program,** and Summary Reports are not returnable for credit.

6. All materials that have been approved for return should be sent, prepaid, to Educational Testing Service, 1440 Lower Ferry Road, Ewing Township, Trenton, New Jersey 08618.

7. Educational Testing Service cannot be responsible for loss or damage that occurs during return. It is suggested, therefore, that materials be insured.

Career Skills Assessment Program of the College Board
Box 2839
Princeton, New Jersey 08541

Order Form

SHIP MATERIALS TO:

Name _____ Position _____

School/Institution _____

Address _____

City _____ State _____ Zip _____

Date needed _____ Date of order _____

School Code (if known) _____ Order submitted by _____

SEND INVOICE TO:

Name _____ Position _____

Institution _____

Address _____

City _____ State _____ Zip _____

Purchase Order Number _____

Telephone ( ) _____
Area Code Number

CSAP Exercise Booklets/Response Sheets/Self-Instructional Guides (Experimental Editions)

	Number of Packages	Amount
Exercise Booklets (reusable). Package of 25–$25 per content area		
795866 Self-Evaluation and Development Skills		
795869 Career Awareness Skills		
795872 Career Decision-Making Skills		
795862 Employment-Seeking Skills		
795856 Work Effectiveness Skills		
795875 Personal Economics Skills		
Response Sheets and Guides Response Sheet is used for both self-scoring and optional machine scoring. A Guide accompanies each Response Sheet. Set of 25 of each – $25 per content area		
795867&8 Self-Evaluation and Development Skills Response Sheets and Guides		
795870&1 Career Awareness Skills Response Sheets and Guides		
795873&4 Career Decision-Making Skills Response Sheets and Guides		
795863&4 Employment-Seeking Skills Response Sheets and Guides		
795857&8 Work Effectiveness Skills Response Sheets and Guides		
795876&795845 Personal Economics Skills Response Sheets and Guides		

Support Materials

		Quantity	Amount
239666 Implementing the Career Skills Assessment Program	$ 2.75 each		
268904 Sound Filmstrip Kit	$48.50 each		
795878 Sample Set	$ 5.00 each		
Scoring and Summary Reports (Minimum Order: 75 Response Sheets per content area — $ .75 each Response Sheet)			
Self-Evaluation and Development Skills			
Career Awareness Skills			
Career Decision-Making Skills			
Employment-Seeking Skills			
Work Effectiveness Skills			
Personal Economics Skills			
		TOTAL AMOUNT ►	$
		LESS DISCOUNT, if applicable ►	$
		NET ORDER ►	$

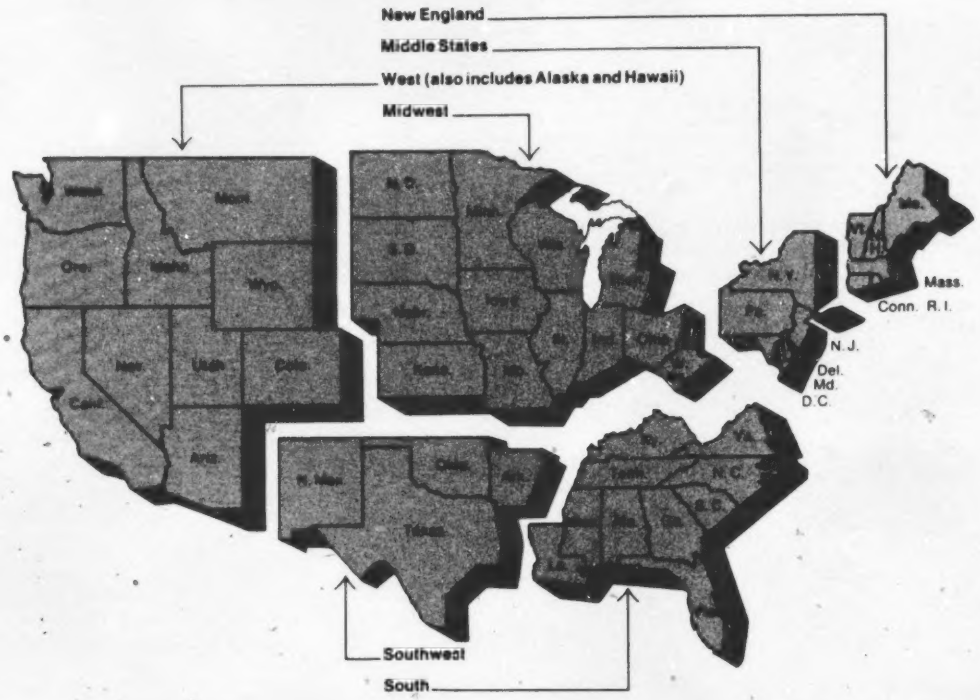
NOTE: Summary Reports will be sent to "Ship To" address.

Please return this form with your purchase order. Allow four weeks for normal delivery. Shipping charges will be added to your invoice; there will be an extra charge for special handling.

Be sure you have supplied shipping and invoicing instructions on this form. For each different "ship to" address, please be sure your purchase order gives clear instructions and school code(s).

Please mail completed order form to:
Career Skills Assessment Program
of the College Board
Box 2839
Princeton, New Jersey 08541

Areas Served by College Board Regional Offices



Middle States Regional Office
The College Board
65 East Elizabeth Avenue
Bethlehem, Pennsylvania 18018
(215) 691-5906

Midwestern Regional Office
The College Board
1 American Plaza
Evanston, Illinois 60201
(312) 869-1840

New England Regional Office
The College Board
470 Totten Pond Road
Waltham, Massachusetts 02154
(617) 890-9150

Southern Regional Office
The College Board
Suite 200
17 Executive Park Drive, N.E.
Atlanta, Georgia 30329
(404) 636-9465

Southwestern Regional Office
The College Board
Suite 922
211 East 7th Street
Austin, Texas 78701
(512) 472-0231

Western Regional Office
The College Board
800 Welch Road
Palo Alto, California 94304
(415) 321-5211

Denver Office:
Suite 23
2142 South High Street
Denver, Colorado 80210
(303) 777-4434